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# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. II.—16TH YEAR. SYDNEY, SATURDAY, DECEMBER 21, 1929. No. 25.


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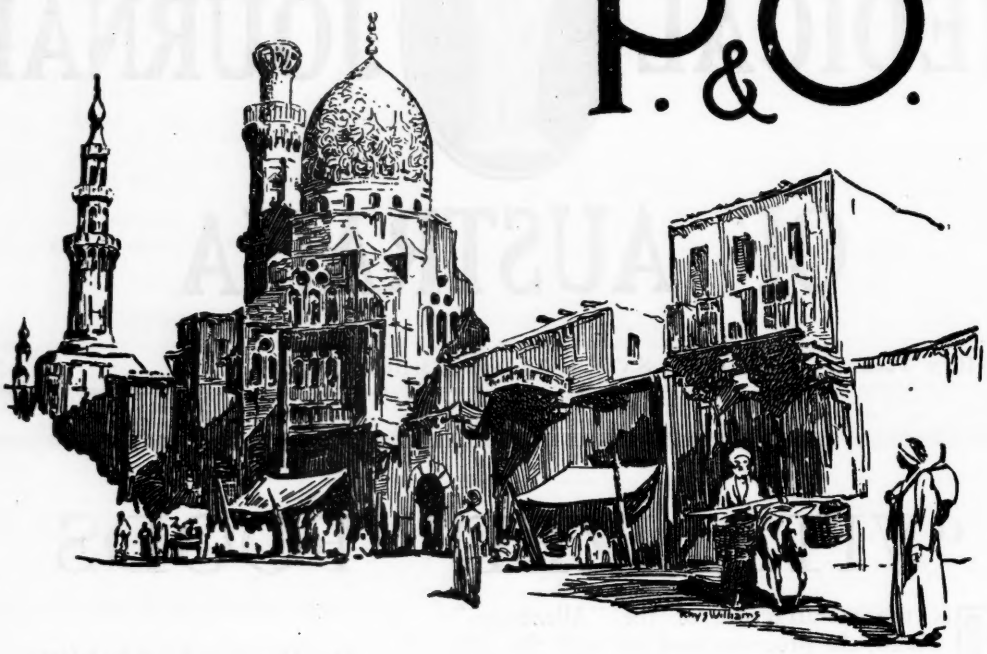

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VOL. II.—16TH YEAR. SYDNEY, SATURDAY, DECEMBER 21, 1929. No. 25.

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# An Address.[1]

By B. T. ZWAR, M.D., M.S. (Melbourne),
*Retiring President of the Victorian Branch of the British Medical Association.*

THIS address marks the termination of the year of my presidency of this Branch of the British Medical Association. My first duty tonight must be to express to you my appreciation of the honour of occupying the position of your president during the past year and next to offer my sincere thanks for the help which has been given to me during my term of office by members of the Council. I wish to acknowledge my special indebtedness to the Honorary Secretary of the Branch, Dr. Frank L. Davies, and to the Chairman of the Council, Dr. J. Newman Morris. It is hard to express adequately my appreciation of their help and of the valuable and onerous services which the Honorary Treasurer, Dr. C. H. Mollison, continues to carry out on behalf of this Branch.

I feel that it is very difficult for members to realize the amount of work and trouble which is undertaken on our behalf by the members of the Council. A mere record of the meetings of the Council and of the actions taken, as is contained in the annual report, is a very inadequate index of this. Much of the hard work of the Council is done by its subcommittees and by their conveners. The position of convener, I know, carries with it a great deal of work and requires much time and thought. To all these workers of the Branch I offer my sincere thanks.

### Surgical Pioneers.

The year just completed, unfortunately, has been marked by the passing from our midst of two members of a noted group of surgeons. I refer to George Adlington Syme and Frederic Dougan Bird. These men, together with William Moore, Robert Andrew Stirling, Charles Snodgrass Ryan and George Rennie mark a definite milestone in the development of the art and practice of surgery in Victoria. One cannot allow their passing without reference to their influence. It is difficult to appreciate the importance of this without a clear conception of the condition of the technique and practice of surgery which they influenced.

May I remind you that Lister commenced the publication of his paper "On a New Method of Treating Compound Fracture, Abscess, etc., with Observation on the Conditions of Suppuration" in *The Lancet* of March 16, 1867, and that from then on there were developed and evolved the principles of aseptic surgical technique which are in force today? We all know of the difficulties which Lister experienced, of obtaining recognition for truths now generally recognized. Though members of the medical profession in Victoria were quick to grasp the importance of Lister's discoveries, the full development and universal recognition were gradual and slow. Thus we find that at the ordinary monthly meeting of the Medical Society of Victoria held on Wednesday, December 14, 1867, nine months after the publication of Lister's paper, William Gilbee, a surgeon on the medical staff of the Melbourne Hospital, reported "two cases illustrating the treatment of abscess and compound fracture by Mr. Lister's new method." When reporting these cases Gilbee expressed the opinion that the use of carbolic acid in the treatment of compound fractures, abscesses *et cetera* was "one of the most important discoveries in modern surgery." But progress was slow, for from this to the next milestone embraces a period of twenty years. This milestone is the report in the *Australian Medical Journal* of July 15, 1887, of a series of cases of primary union of wounds by Dr. J. F. Wilkinson, then a house surgeon at the Melbourne Hospital. These cases were under the care of Mr. Girdlestone and included an operation for removal of loose cartilages in the knee joint and an amputation of the right arm for compound comminuted fracture. Special mention was made of the fact that "in none of these cases was the spray used."

But though twenty years had passed since Lister announced his original method of treatment, there still existed a great deal of doubt and uncertainty as to the value of his discovery. As a proof of this may I take you back to the first Intercolonial Medical Congress held in Australia? This was held in Adelaide from August 30 to September 2, 1887. At this Congress Mr. (later Sir) Thomas Fitzgerald presided over the surgical section. In the course of his presidential address he spoke as follows:

> Lister followed with his world-renowned theory and system of aseptic treatment. Allowing for all the undoubted progress which Listerism has brought, it may yet be asked, does its secret consist only in cleanliness and dependent openings, or have the gauze and spray imparted some new power to surgery? I am indeed of two frames of mind. When I read of the triumphs of Tait and of the wound treatment of Gamgee, I am disposed to hold that the nail brush and tubing are the real factors of success; but when old memories revive, and I recall the hectic with the flushed face, bed-eaten skin and pus-sweating ulcers, I feel that there is really something in the system, though not nearly so much as its enthusiasts believe.

Those who knew Thomas Naughton Fitzgerald will remember his brilliance as a surgeon, yet even he failed to appreciate fully the importance of Lister's discoveries.

Into this atmosphere of doubt and uncertainty came the fresh, keen intellects of the group of surgeons whose names I have mentioned. Of each one could it be said that he was

> In the very May-morn of his youth
> Ripe for exploits and mighty enterprises;

and those who had the privilege of observing their progress and of appreciating their influence, realized how these men helped in the conquest of disease and of sepsis in this country. Speaking of that period I would like to quote to you from a recent personal communication of Dr. C. H. Molloy who was Medical Superintendent of the Melbourne Hospital from 1889 to 1900. Dr. Molloy had extra-

[1] Delivered at the Annual Meeting of the Victorian Branch of the British Medical Association on December 4, 1929.

ordinary opportunities and capabilities for forming a sound and considered opinion. He writes as follows:

> Regarding the evolution of surgery. When I was a student the spray was the fetish everywhere. I believe the medical staff was opposed to Listerism; the hospital was the home of germs. I understood that the late Professor Elkington, then on the committee of the Melbourne Hospital, forced the staff's hands. Results were not good till asepsis came in. At the Melbourne Hospital the late Mr. Stirling deserves the credit for insisting on it, backed up by Syme, Moore and Rennie.

The men to whom I have referred, lived at a wonderful period, one which was virtually the dawn of a new era in the history of surgery. They recognized the light and bore it into the darkness which surrounded them. And as in surgical technique so in every field related to the advancement of surgery, of medical education, of hospital administration and of the health of the community; one or other of these men was always the standard-bearer of every noted advance. Now that they have passed it may be well said:

> And when the stream
> Which overflowed the soul was passed away,
> A consciousness remained that it had left,
> Deposited upon the silent shore
> Of memory, images and precious thoughts
> That shall not die, and cannot be destroyed.

### Medical Education.

So though they have passed, we still may take counsel from them. Syme and Moore always took a keen interest in the subject of medical education and it is interesting to recall one of their earliest expressed opinions. In 1889, whilst editors of the *Australian Medical Journal*, they wrote as follows:

> So long as medical science continues its present rapid evolution, so long will frequent changes in our methods of medical education be necessary. It would be as hopeless as absurd, to think of planning now a curriculum that should be final and perfect. It is high time, however, to get rid of many of the traditions of the past, both as regards subject matter and methods.

We all know the tremendous advances which have taken place during the forty years which have elapsed since this was written — advances not limited to the realms of medicine and surgery, but embracing those of physiology, pathology and biochemistry. Yet a comparison of the medical curriculum of today with that of 1889 reveals the fact that there have been practically no reductions or remissions of the subjects then taught. There have been adjustments in regard to the stage in the curriculum at which certain subjects are taken; most important amongst these is that under the 1889 curriculum the students commenced their clinical work at the beginning of the third instead of the fourth year.

The point, however, which it is desired to stress, is that nothing of importance has been eliminated or reduced, but that there have been added zoology, biochemistry, ophthalmology, diseases of the skin, mental diseases, venereal diseases, special instructions at a fever hospital, a special course of instruction in diseases of the throat, nose and ear, and radiology. The revised medical curriculum of the General Medical Council also desires that proper provision should be made for instruction in antenatal conditions and infant hygiene. There have been other additions, but enough have been detailed to warrant the fear that the curriculum has become overburdened and for this reason alone it should be the subject for review.

It is not my intention to weary you with an outline of a new medical curriculum, but it is desired to take this opportunity to stress the contention made by our illustrious colleagues of forty years ago which in effect is that any system of medical education should be adapted to the state of medical knowledge and requirements of any particular time. Now as regards the state of medical knowledge, there can be no doubt that the outstanding change which has occurred during these forty years, is the establishment of specialization.

In the evolution of our curriculum attempts have been made to conform to this change during the course of its development, with the consequence that one special subject after another has been added to the curriculum. To an extent at least the fact has been lost sight of that, notwithstanding the development of specialization, the general practitioner remains the "vertebræ of the backbone of the profession." As long as this is the case, the first objective of the curriculum should remain the production of a practitioner who is well fitted to carry out the work of general medical practice. From this point of view it is desirable that every special subject should comply with a definite demand in the requirements of the general practitioner and the relative importance of the several special subjects should be carefully weighed in its relation to the requirements of general practice. The extent to which a special subject is to be taught, should be assessed by such requirements. Moreover, other things being equal, it would seem that the best place for the teaching of a special subject to a medical student is in a general hospital, in order that the work of the subject may retain its proper relationship to general practice. Diseases of children and midwifery must be excepted, for these are so important in the work of general medical practice and call for such a wide range of experience that we must look to the special hospitals to provide the proper facilities for their teaching.

This aspect of medical education is intimately associated with the principles governing the training of the medical or surgical specialist. It is admitted that the widest experience of general medical practice is of the greatest advantage to a graduate who enters upon the study of a specialty. It is well that those who aim to make themselves efficient in one or other of the specialties, should be taught to appreciate this. Not only should they realize that they will best fit themselves for their work by an efficient training for and experience of general practice, but that the training for their specialty will require much additional time, work and study under skilled supervision.

Two years ago, whilst travelling in Europe, I interested myself in the methods in operation for

the training of surgeons in some of the European countries. I found that in several of these countries it is the practice to make it clear to students that if they desire to undertake specialist's work, they must be prepared for a course of special training and specially qualify themselves for such work after they have completed their course of training for their ordinary qualifications. Speaking of surgery, Billroth in *"Lehren und Lernen der medizinischen Wissenschaften"* says:

> To give special courses in operating for students is futile. It is much more important to enlighten the students by systematic lectures on surgery in general as to when an operation is necessary and to discuss in these lectures only the simplest operative manipulations, as well as the technique of emergency operations that must be done quickly for the immediate saving of life. All else had better be left to later special study in surgical wards.

A point that impressed me specially in the medical schools in Holland and other European countries, is the provision in the curriculum which insures that all students obtain practice and experience in clinical work after they have passed their theoretical examinations. Students, moreover, must pass examinations to show that they have properly profited by such practice and experience before being granted the ordinary qualification allowing them to practice. The length of the curriculum in these countries varies from seven and a half years in Belgium and Holland up to ten years in Sweden and Norway.

It is well worthy of consideration whether, by eliminating from our curriculum that which is superfluous or redundant, room could not be made for a period of residentship in hospital, so that every medical student may have an opportunity of acquiring technical skill and experience before being granted a qualification entitling the holder to register as a qualified medical practitioner. The valuable experience of a hospital residentship would then become an essential part of a medical student's training. It is felt that this could be accomplished without any addition to the length of the curriculum. Will any examiner contend that our medical students, when they graduate under present conditions, possess the necessary proficiency in technical skill and experience to undertake the responsibilities of practice? Yet under our system only those most fitted, according to our methods of determining this, are given an opportunity of gaining skill and experience under supervision. The others accept positions in country hospitals or private practice which may impose grave responsibilities.

Our medical schools in Australia have shared the experience of the medical schools in other portions of the Empire in that towards and after the termination of the war the schools became so overcrowded with students that it was scarcely possible to find adequate laboratories and other facilities for carrying out their education. Various factors contributed to this state of affairs. There was during the progress of the war the ever increasing demand for army medical officers and the progressive depletion of the civil medical service. With the termination of the war there were added to the generation of medical students too young for enlistment during the war, then commencing their studies, those who would have been engaged in their medical studies but for the war; and there was a continuance of the increased demand for medical graduates owing to the requirements of the repatriation service and its hospitals. It is a matter of experience that this increase in the number of medical students continued after the increased demand had been met and that this led to an overcrowding of the medical profession. The result has been a reaction and a fall of the number of students to a level at which the annual number of new graduates has become insufficient to meet the demand of the several public hospitals. The following figures give the number of medical students in the first year and the number of graduates at the University of Melbourne in each year from 1914 to date: 1914, 116, 65; 1915, 99, 84; 1916, 127, 72; 1917, 163, 54; 1918, 192, 69; 1919, 209, 14; 1920, 202, 62; 1921, 151, 59; 1922, 111, 91; 1923, 91, 107; 1924, 65, 131; 1925, 75, 145; 1926, 61, 124; 1927, 71, 45; 1928, 73, 82; 1929, 84, 65.

This state of affairs has furnished a favourable opportunity for introducing into our system of medical education a compulsory period of hospital training, during which students may acquire technical skill and experience, in place of the attendance in special subjects, now often undertaken with the sole object of obtaining attendances necessary to allow the student to sit for the final examination. Such a change, if it could be accomplished, would in effect result in that the medical student would be trained for the practice of medicine instead of for the examination hall. Though to carry it out may entail difficulties, the present state of medical knowledge seems to demand some such change in our system of medical education.

If general medical education is governed by the requirements of general medical practice, then changes in the duties or scope of such practice must become factors which should influence medical education.

There can be no doubt that various developments during the last twenty-five years have narrowed and altered the scope of general practice. Certain phases of the industrial legislation of recent years have undermined the spirit of independence and self-reliance which formerly characterized all sections of this community, and have led to an ever-growing dependence upon public help in every possible direction. The result of such undermining is twofold. There is in those affected a lack to make the necessary provision for sickness and invalidity and further there is the creation of a mental or moral state which does not shrink to abuse provisions intended for the necessitous. This shirking of personal responsibilities has greatly narrowed the scope of general practice and is an important factor in the overcrowding of our public hospitals, particularly of the out-patients' departments of these institutions. Apart from the provisions for

relief in cases of sickness, public aid has extended its influence in other directions through the agency of various welfare organizations, all good in their intentions, but all liable and subject to abuse. Added to these factors which have narrowed the sphere of influence, is the fact that the general practitioner has lost scope through the establishment of various specialties. Diseases of the eye, ear, nose, throat, skin and a great deal of the midwifery work which used to go to the general practitioner, now go to the specialists or are cared for in public hospitals and through aid organizations.

As against this loss or narrowing of influence there is the ever-increasing range of electro-physical and biochemical methods of diagnosis and treatment as well as the growing importance of the preventive aspect in dealing with the inroads of disease. These are developments which have imposed new demands in training, experience and duties of the general practitioner. Nevertheless most of the changes called for by the altered conditions in present day general medical practice dove-tail in with those depending on the present day knowledge.

One more point. Everyone experienced in medical education, recognizes that the practice of medicine and surgery resolves itself into the logical application of a knowledge of anatomy, physiology and pathology. It is obvious, therefore, that in any scheme of university medical education there should be a close and living relation between these subjects and the clinical study and experience based upon them. Yet it is a matter of experience of teachers and examiners in clinical surgery, on which I feel that I am entitled to speak, that such relationship does not obtain in our Melbourne schools. The subjects of anatomy, physiology and pathology are taught in more or less water-tight compartments; the student learns the subjects in order to pass examinations and not from the point of view of applying the knowledge to clinical work. Such lack of relationship will continue as long as the academic and clinical parts of the curriculum remain dissociated. As one reviews the advances of medical knowledge, the changed requirements of general medical practice and the establishment of specialization, it would seem that the medical curriculum should be so altered as to allow (i) a better coordination between the teaching of the subjects of anatomy, physiology, pathology and the clinical teaching of medicine and surgery, (ii) clinical study to be the mainspring of medical education and the strengthening of this by providing better opportunities for acquiring technical skill and experience for all medical students, (iii) facilities for education after graduation, particularly for advanced special studies and for "refresher" courses.

Whatever view we hold on the subject of medical education there can, I think, be no doubt that changes which time has effected in the knowledge and practice of medicine call for a careful review of the medical curriculum and our methods of teaching, for

> New occasions teach new duties;
> Time makes ancient good uncouth;
> They must upward still, and onward;
> Who would keep abreast of Truth.

### Public Questions.

Changes in medical practice call for the review of one or two other questions. Owing to the growth and the importance of the preventive aspect of medicine we may well ask whether the time has not arrived when the medical profession as a body should drop some of that reserve which has characterized its attitude in regard to public questions which affect the welfare and the health of the community. Take for example the present day picture shows; surely it is time that the profession sounded and continued to sound a note of warning regarding the evil influence of many of the cinematograph and so-called "talkie" performances. The spending by a great section of our youth in a vitiated and debasing atmosphere of much time which might be occupied in health-giving recreation will result in physical and moral deterioration. In a recent issue of the *Revue International de l'Enfance* Dr. Rouvray draws attention to the danger from such performances. He points out that:

> The results are much worse than those brought about by harmful books or pictures and no real value can be attached to the operation of a censorship or the imposition of an age limit. Even the best films for adults contain scenes of violence and crime; they may be of a highly suggestive type and they have an intense effect on the sensitive mind of the child. In particular, films of the propaganda kind tend to advertise the vice they are supposed to condemn. Moreover, the intensity with which the child's attention is gripped by the film story is a cause of fatigue. Thus a performance lasting two hours, including ten two-minute intervals, involves an expenditure of 20% of the physical energy, twice that involved in the ordinary school day; the effect is still greater in the case of less healthy or nervous children.

Added to this denunciation we have it on the authority of Mr. Seabury, a member of the American bar and a recognized authority on all matters relating to the cinematograph, that the average film "is concerned only with crime, sex and money, played down to the crudest and most elemental form." Mr. Seabury in a recently published book, "Motion Picture Problems," tells us that "those who control the industry, have no sense of public responsibility and pander to the lowest tastes."

If only a part of all this be true, then the effect of such undesirable performances must lead to physical and moral degeneracy and it should be our duty to do the utmost to stop or at least minimize the evil influence of such performances in our community. Should we fail in our duty, then it may become a case of

> Diseases, desperate grown,
> By desperate appliances are relieved,
> Or not at all.

### Advances in Medical Science in Relation to Lodge Practice.

Another change to which it is desired to direct your attention, is that which has occurred in the conditions of lodge practice. The British Medical Association was formed in 1832 "to promote the

medical and allied sciences and maintain the honour and interest of the medical profession." The most efficient medical service to the community is tantamount to the best interest of the medical profession and the association. This is the aim of its ethical and other rules. It is from this aspect that the conditions in lodge practice to which it is desired to refer, are approached. My personal experience of lodge practice consists of two brief periods immediately after my qualification, one in a metropolitan and the other in a country town lodge practice. This experience convinced me of two things: That the work was unsatisfactory; that it was an essential part of the medical service of the community.

Now the advances in the methods of diagnosis and treatment which have occurred since then, have made the work of the lodge medical practitioner much more onerous than at any former stage of medical practice. The special methods of investigation require facilities which can be provided in a satisfactory manner only by the establishment of laboratories, where X ray, biochemical and bacteriological investigations can be carried out by a trained staff. Such investigations are a development of modern medical science. The establishment, equipment and organization of such laboratories entail the expenditure of considerable funds. Friendly societies have the machinery for raising such funds and since without the facilities for such investigations this part of the medical service of the community fails in its efficiency, it is hoped that they will find the means for rectifying this defect. Such action will confer a great benefit upon members of the friendly societies and, moreover, will help to lessen the overcrowding of the out-patient departments of our public hospitals.

### Post-Graduate Work.

The year just terminated completes the fiftieth year of this Branch of the British Medical Association. It was established on September 25, 1879, on the suggestion of Ernest Hart, then editor of *The British Medical Journal*. It commenced with a membership of thirty and meetings of the Branch were held in the building of the Royal Society. William Gilbee, a surgeon on the staff of the Melbourne Hospital, was the first President. It was very fitting that in this fiftieth year of its existence the Branch should have been honoured by a visit of the immediate Past President of the association, Sir Ewen Maclean. We feel that his visit will be productive of much good. We trust that his interest in post-graduate teaching will lead to a better organization of the facilities for post-graduate work at home. Whilst we gratefully acknowledge our indebtedness to the Australian and New Zealand Medical Association in London, the Fellowship of Medicine, established in 1918, and to other similar organizations in London, Edinburgh, Glasgow and elsewhere, we hope that there may be established in London an organization which will provide and coordinate post-graduate courses for special studies and refresher courses not only in London, but also in other centres. In this connexion it is desired to congratulate the Melbourne Permanent Committee for Post-Graduate Work on the success of its efforts. Its work has been the subject for expressions of admiration of all who have had an opportunity of judging. Its success must be a matter of great gratification to Dr. J. W. Dunbar Hooper and those who have taken such an interest in its establishment and its activities.

Finally, one word in regard to the future. The success of the work of this Branch, which connotes the profession of this State, depends on the interest and conception of duty of each individual member. For—

Men who their duties know,
But know their rights, and knowing, dare
maintain.

## THE SEQUELÆ OF TOXÆMIA OF PREGNANCY.[1]

By H. C. E. DONOVAN, M.B. (Sydney),
*Honorary Surgeon, The Women's Hospital, Crown Street, Sydney.*

UNDER the general heading of toxæmia of pregnancy are included some well known and readily differentiated conditions, some which are difficult to classify, and others of which the toxic origin is in doubt. Those conditions of which the toxic origin is not proved, include ptyalism, *chorea gravidarum*, pruritus, polyneuritis, aplastic anæmia and certain psychoses and neuroses. Many of these recur with successive pregnancies.

The more usually understood toxæmias include *hyperemesis gravidarum*, simple albuminuria without other symptoms, pregnancy kidney, the pre-eclamptic state and eclampsia and acute yellow atrophy. Preexisting chronic nephritis is also common and in many cases is difficult to distinguish from toxæmic albuminuria. There is in addition a definite relationship between toxæmia and such conditions as *ante partum* hæmorrhage and pyelitis.

In spite of the doubts that exist as to a distinction between the two forms of *hyperemesis gravidarum*, I am convinced that the toxic form accompanied by such organic objective signs as albuminuria, biluria, casts, raised blood pressure and tachycardia, is a different clinical entity from the neurotic form in which the only laboratory evidence is the presence of acetone and diacetic acid in the urine consecutive to the starvation. There is no evidence that the toxic form leaves any sequelæ between pregnancies, but there is no doubt that the condition often recurs at subsequent pregnancies. The neurotic variety also recurs at future pregnancies and may leave various neuroses as sequelæ.

I am of the opinion that patients should not be allowed to become pregnant for at least two years after an attack of either form. In the severe organic form that has recurred several times and has necessitated therapeutic abortion, I should have forbidden pregnancy but that the use of glucose and "Insulin" now holds out hope of live birth.

[1] Read at a meeting of the New South Wales Branch of the British Medical Association in conjunction with the Section of Obstetrics and Gynæcology on October 31, 1929.

Acute yellow atrophy is a rare disease and is so fatal that sequelæ need not be discussed. I would like to suggest that many conditions diagnosed as acute yellow atrophy are chloroform poisoning on the one hand and puerperal infection by hæmolytic streptococci on the other. When the condition arises after delivery, the diagnosis is usually incorrect.

I have now to consider the large and varied groups of affections that are accompanied by albuminuria at one time or other during their course. These vary in their symptoms, dangers, immediate and remote prognosis and in their sequelæ. The classification varies with different authors, but all agree in distinguishing chronic pre-existing nephritis as a separate entity. The differentiation of this from toxæmias arising during pregnancy often presents great difficulty. The presence of secondary changes in the cardio-vascular system proves the diagnosis in some instances, but the youth of the patient may prevent these from having yet developed. The blood pressure is less raised than in eclamptic toxæmia. Massive œdema may occur in either this or in pregnancy kidney, but effusions into the pleural cavity, ascites and other conditions are common in chronic nephritis and do not occur to my knowledge in pure toxæmia of pregnancy. As Dr. Waddy will tell you, the appearance of the retina may help in the diagnosis. The blood urea and non-protein nitrogen are both high. The hepatic function is found by the various tests to be normal.

The sequelæ are simply the fact that each pregnancy makes worse the condition of chronic nephritis and shortens the life of the patient. Such women should not as a rule become pregnant. Still-birth is very liable to occur. If they have borne live children, the contraindication to pregnancy is definite, as the social advantage of their value as mothers of the children they already possess, should protect them from the dangers of shortened life or blindness for the sake of a probable still-birth. If they are childless, the question of pregnancy depends on the changes in their heart and vessels, the condition of the retina, the amount of albumin, the number and variety of casts and on the results of tests for renal efficiency. If the risk of pregnancy is undertaken, both the patient and her husband should be cognizant of the risks and the patient should be carefully watched throughout pregnancy and labour induced when the child is viable, both to minimize the damage to the kidneys and to increase the chance of a living child, as most of the still-births are due to fœtal death during the last few weeks of pregnancy. If the grave risk of pregnancy is undertaken at all, the pregnancy should be terminated if the urea concentration falls below 2·5% or if fresh retinal changes occur.

Excluding these cases of preexisting nephritis, the toxæmias of pregnancy accompanied by albuminuria range from simple albuminuria without symptoms to true eclampsia. Included must also be those cases of œdema without heart lesions, but on investigation in most or all of these transient albuminuria will appear at some time. Some forms of albuminuria are, of course, cyclic and dietetic and are not related to the pregnancy. This classification is not entirely satisfactory; at times the same terms are used with quite different meanings; for example, the term nephritic toxæmia is used by some to mean concurrent chronic nephritis and by others as synonymous with pregnancy kidney. Better to my mind than the usual classification into simple albuminuria, pregnancy kidney, preeclamptic toxæmia and eclampsia is Fairbairn's division into acute and subacute toxæmia of pregnancy. The former consists of preeclamptic toxæmia which arises not before the seventh month, runs a short course and has a relatively bad immediate prognosis, but an excellent remote one for the mother and a bad prognosis for the child. The subacute form arises earlier in pregnancy, is slower and insidious and has a good immediate but doubtful remote prognosis; there is far more impairment of renal efficiency, œdema is more extensive and increases more slowly and there is little or no rise of blood pressure, headache or impaired vision. In the acute form there is commonly headache, vomiting, greatly raised blood pressure and grave dangers of actual eclamptic fits, but renal efficiency is little if at all impaired. It is in patients with the acute form that positive responses to Fouchet's and Ehrlich's aldehyde tests are obtained. But my experience is that even in impending eclampsia a positive response to these tests is not always obtained.

Having briefly classified the various forms of toxæmia of pregnancy, I come to the question of sequelæ. It is necessary to consider in the first place to what extent is a woman who has had an attack of toxæmia, permanently damaged, especially as regards her kidneys and liver, and in the second what is the risk of recurrence of symptoms of toxæmia in subsequent pregnancies.

The authorities are not unanimous as to the answer to either question.

Fairbairn, as previously stated, gives the eclamptic and preeclamptic type a good remote prognosis and the subacute type a doubtful one. de Wesselow and Wyatt agree with this and are of opinion that in eclamptic toxæmia the immediate prognosis is doubtful and the ultimate good, while in nephritic toxæmia the ultimate prognosis is frequently bad. Williams says that one attack of eclampsia confers a relative immunity for the future and he quotes Slems and Lefage to this effect. De Lee is of opinion that while many authors believe that one attack of eclampsia confers immunity, such is not always the case. He states that in subsequent pregnancies albuminuria and casts may recur. While there is difference of opinion, it is a fact that many consider that there is permanent damage in some patients; many consider that there is a tendency to recurrence and that this is greater if the next pregnancy occurs within the year.

To gain an idea of the prognosis and the danger of recurrence under Australian conditions I have examined the records of the patients suffering from toxæmia admitted to the Women's Hospital during 1925, 1926, 1927 and 1928. While the total number is not large, it is sufficient to enable us to arrive at some broad conclusion, especially as the percentages were practically constant for each year. This series consists of forty-two patients with eclampsia who recovered, two hundred and fifty-nine with albuminuria during pregnancy and fourteen with œdema without albuminuria. These patients numbered 315 out of a total of 6,510.

The forty-two patients with eclampsia included thirty-one *primiparæ* and eleven who had had previous births. Of these six *primiparæ* and six *multiparæ* still had albuminuria on discharge from hospital. This is 19·3% of *primiparæ*, 54·5% of *multiparæ* and 28·6% of all patients. In only two was there a history of toxæmia at previous pregnancies, one giving a history of kidney trouble and one of œdema of the vulva. In other words only two of eleven previously parous women (18%) gave a history of previous toxæmia.

The series of albuminuria without eclampsia consisted of one hundred and thirty-one *primiparæ* and one hundred and twenty-eight previously parous women. Of these thirty-five *primiparæ* and thirty-three previously parous women had albuminuria on discharge. The figures are practically the same, 26·7% in *primiparæ* and 25·8% in others. The stay in hospital of these patients varied between ten days and eight weeks.

Of the one hundred and twenty-eight previously parous women thirty-two or 25% gave a history of toxæmia at previous pregnancies as follows: Nineteen gave a history of kidney trouble, two of albuminuria, three of eclampsia, one stated that she had been treated for eclampsia at three previous pregnancies, four had had swelling of the feet and legs, one of these at three consecutive pregnancies, one œdema of the vulva and two had vomited throughout pregnancy. In addition five had had pyelitis at previous pregnancies.

Included also in this series were fourteen patients with œdema not due to cardiac disease, in whom albuminuria was not noted. Nine were *primiparæ* and five *multiparæ*. The small number of these as compared with those seen in general practice is due to the fact that the urine of most patients with œdema will be found to contain albumin if it is examined daily.

Some of the deductions that can be drawn from these figures, combined with personal experience in hospital and private practice, are as follows.

Although the total number of patients is small, the striking difference between 19·3% and 54·5% suggests that kidney symptoms are more persistent after eclampsia in *multiparæ* than *primiparæ*. The fact that two of eleven multiparous eclamptics gave a history of toxæmia at previous pregnancies suggests that the subacute form may sometimes develope into the acute at a subsequent pregnancy. No patient in this series actually had eclampsia repeated at a subsequent pregnancy, but I know of one not in this series who had eclampsia and live birth at first confinement, eclampsia and still-birth at the second, eight years later, and died of chronic nephritis eight years later still. In three patients with albuminuria there is a history of eclampsia at a previous confinement which demonstrates that eclampsia does not always confer immunity to toxæmia at subsequent pregnancies.

With regard to albuminuria the group included all patients in whom albuminuria occurred during pregnancy and it is impossible to separate these from the recorded facts available. The stay of these patients in hospital varied within limits of ten days to many weeks. Taking these facts into consideration the fact that over 26% of all patients left hospital with evidence of kidney impairment proves that a considerable number sustained lasting damage to their kidneys. All patients with albumin in their urine at the time of discharge were referred to the post-natal outdoor clinic and although it is impracticable to follow these patients individually, inquiry from the honorary medical officers in charge of the clinic brings out the fact that they are convinced that the albuminuria disappears in the majority in a longer or shorter time, but persists in some women. They are also certain that the percentage of toxæmias that recur in subsequent pregnancies, is very high.

The most important fact shown in this series is that 25·8% of previously parous women suffering from toxæmia had suffered from toxæmia at one or more previous pregnancies. The number of patients, one hundred and twenty-eight, is sufficient to arrive at a strong presumption that this percentage is roughly correct, especially as the same percentage is seen in each of the four-year records examined. The impression of the honorary surgeons of the outdoor ante-natal clinic is that the percentage is even higher than these figures. The fact that an

| Condition. | *Primiparæ.* | | | *Multiparæ.* | | | | |
|---|---|---|---|---|---|---|---|---|
| | Number. | Albuminaria on Discharge. | | Number. | Toxæmia during Previous Pregnancies. | | Albuminaria on Discharge. | |
| | | Number. | Percentage. | | Number. | Percentage. | Number. | Percentage. |
| Eclampsia .. .. .. | 31 | 6 | 19·3 | 11 | 2 | 18·2 | 6 | 54·5 |
| Albuminuria of Pregnancy | 131 | 35 | 26·7 | 128 | 33 | 25·8 | 32 | 25·0 |

additional five of the twenty-eight suffered from pyelitis at previous pregnancies is interesting.

### Treatment.

From an obstetric point of view the main questions for consideration are the safety or otherwise of the patient at a subsequent pregnancy and the management of future pregnancies in the event of their occurrence.

My own ideas on this subject coincide with the inferences to be drawn from this series, that many women after eclampsia or acute toxæmia are left with damaged kidneys, that a larger number both actually and proportionately after an attack of the subacute type is similarly affected and that a considerable proportion, far more than is usually supposed, has a recurrence of toxæmia at subsequent pregnancies.

While it is admittedly difficult to assess the damage inflicted by subsequent pregnancies, it is certain that in some patients chronic nephritis, diminished expectation of life and the risk of blindness result. Whether or not the risk of subsequent pregnancy should be undertaken depends partly on the number of children living, the wishes of husband and wife and on the results of a careful history and physical examination of the patient; each case must be judged on its merits.

Authorities are in agreement that the risk of recurrence is greater in the first year and I am convinced that a woman should not risk another pregnancy for two years following an attack of eclamptic toxæmia or actual eclampsia and still less after a pregnancy accompanied by albuminuria or œdema. If necessary she should be instructed in safe and adequate methods of contraception. The temporary employment of such methods will increase and not diminish her chance of live birth, as the still-birth and neonatal death rates of toxæmia are very high. Before the risk of pregnancy is undertaken, a careful examination should be made. The urine should be free from albumin and casts, the responses to the renal efficiency tests should be normal and in particular the urea concentration should be well above 2%. The blood pressure and cardio-vascular system should be normal. If this examination is satisfactory, the risk of pregnancy is justified, but the patient should be under observation from early in pregnancy.

In patients in whose urine albumin or casts are present, pregnancy should be postponed beyond the two years and may be permanently contraindicated. Chronic nephritis with cardio-vascular changes form bad pregnancy risks for both the mother and the child, as the nephritis tends to be lit up by each pregnancy and the still-birth rate is high. When pregnancy is permanently contraindicated, the question of sterilization is to be considered. If there are living children it is socially and economically better to conserve the health of the mother than to risk early death or invalidism for the sake of a pregnancy that so frequently results in still-birth. If the woman has no living children, the decision is more difficult and social and medical factors must be balanced and the final decision left with the woman and her husband.

### Treatment of Subsequent Pregnancies.

The risk of breakdown of metabolism and excretion that is implied in toxæmia of pregnancy, is increased by constipation and improper diet. From the beginning constipation must be avoided, the fluid intake maintained and overeating, especially of nitrogenous foods, avoided. Plenty of plain water should be taken and one meat meal a day is sufficient. The urine should be examined regularly and headaches, diminished secretion of urine, œdema and other abnormal symptoms immediately reported and investigated. Should œdema or albuminuria occur, a urea concentration test should be made and it is to be remembered that the percentage in pregnancy is normally higher than usual. Less than 3% is cause for anxiety and under 2·5% is evidence of definite toxæmia. It may become necessary to empty the uterus, but if pregnancy has progressed far, an attempt should be made to tide the patient over until the fœtus is viable. In all such patients the report of an oculist is of the greatest value and retinal hæmorrhage or albuminuric retinitis is a positive indication for terminating the pregnancy. In late acute toxæmia the measurement of blood pressure and hepatic function tests are of value in arriving at a prognosis, but in the acute types induction of labour is contraindicated without some days of treatment by purging and starvation, otherwise the risk of precipitating fits is very real.

Once viability is achieved, induction of labour is to be performed as soon as any serious indications appear, both to increase the chance of live birth and to minimize the damage to the woman's kidneys.

Finally, while I have no wish to paint an overgloomy picture of the future of patients who have had toxæmia of pregnancy, and while I believe that the majority completely recovers and can bear future pregnancies in safety, I am more and more convinced that the prognosis is not so invariably good as is sometimes supposed, that some patients are left with damaged kidneys and that a considerable minority has recurrence of toxæmia in subsequent pregnancies. I am quite convinced that pregnancy should always be postponed for two years and then undertaken only after careful examination and with strict supervision of the entire term of gestation.

## SEQUELÆ OF THE TOXÆMIAS OF PREGNANCY FROM A MEDICAL POINT OF VIEW.[1]

By L. H. HUGHES, M.D. (Sydney),
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No satisfactory explanation has yet been reached as to the ætiology of the toxæmias of pregnancy and

[1] Read at a meeting of the New South Wales Branch of the British Medical Association in conjunction with the Section of Obstetrics and Gynæcology on October 31, 1929.

a knowledge of their after-effects is still indefinite. In this paper I have attempted but a brief survey of the subject supplemented with a few illustrative cases from personal observation. The experiences of some years in general practice perhaps furnishes a practitioner with certain advantages which are not always to hand even in hospital clinics, inasmuch as he is able to keep in touch with patients during the whole of the ante-natal period and for a considerable time afterwards.

It is admitted that the term toxæmia of pregnancy is a loose one, implying as it does a specific toxin associated with pregnancy and as yet no such toxin has been demonstrated. It seems probable that the clinical findings associated with these conditions may be due to the fact that pregnancy has occurred in a woman who is constitutionally deficient, and in whom certain organs are unable to respond to the increase of function demanded of them.

Pernicious vomiting and acute yellow atrophy of the liver, both serious conditions included in the toxæmias of pregnancy, have little interest as regards after-effects and have been accordingly omitted from this paper. Only those conditions which are associated with nephritis, will be considered.

I have adhered to the usual classification of these conditions into three groups: (i) Acute toxæmic form or eclampsia, (ii) preeclamptic toxæmias, (iii) chronic nephritic form or nephritic toxæmias.

The first group comprises those fulminant conditions occurring as a rule shortly before the onset of labour. There is headache, vomiting, œdema, usually a sharp rise in blood pressure, albuminuria and convulsions.

CASE I. M.J., *ætatis* nineteen, *primipara*, obese, as these patients frequently are, but otherwise a healthy girl in every respect. There was no previous history of any illness and the family history was good. Examination in the early months of pregnancy revealed normal cardio-vascular and renal systems and subsequent examinations at intervals of three weeks revealed no departure from normal. The onset of labour at term was ushered in with headache, epigastric pain and vomiting, followed next day by convulsions. There was slight œdema of the face and ankles. The systolic and diastolic blood pressures were 180 and 100 millimetres respectively and the urine after boiling was almost solid with albumin. The patient was delivered of a still-born child and made an uninterrupted recovery. The blood pressure and urine returned to normal within three weeks. I did not see her again until six months after confinement. There was then very definite increase in the cardiac dulness, the blood pressures were 150 and 90 millimetres and the urine contained a definite cloud of albumin; no casts were seen and the concentration of urea in the urine in the second hour's specimen was 2·2.

CASE II. M.B. was a *primipara*, *ætatis* twenty-four, whose previous history and family history contained no information of significance. The results of urine examination and the blood pressure readings were normal and the cardiac dulness was within the usual limits. A fortnight before term a moderate cloud of albumin was detected and a rise in blood pressure; some days afterwards œdema of the eyes and ankles was noted, eclamptic symptoms ensued and the patient passed into convulsions. Labour commenced at the same time, delivery followed in due course and recovery was uneventful. The patient was seen on several occasions during the next few months and albuminuria was noted during that time, but ultimately disappeared. This patient was next examined twelve months after the confinement. The apex beat of the heart was in the fifth space, 11·4 centimetres (four and a half inches) from the mid-line, the systolic and diastolic blood pressure readings were 150 and 80 millimetres respectively, the urine contained a cloud of albumin and the urea concentration readings were 1·35, 1·2 and 1·9.

In both instances the patients were perfectly healthy women prior to pregnancy, but within twelve months of confinement there were definite signs of renal damage.

The second group of preeclamptic toxæmias includes patients who begin to exhibit renal symptoms during the latter month or two of pregnancy. The urine, previously clear, now contains albumin, œdema appears and may be quite extensive; there is probably a rise in blood pressure. The practitioner has an uneasy time and is ever on the look-out for squalls. These patients may pass into eclampsia or go through labour without any further happening.

CASE III. N.M., *primipara*, *ætatis* thirty. There was nothing of note in this patient's history nor in her pregnancy until two months before term when albuminuria and œdema were noted. She was given appropriate treatment and went to term without convulsions or any other mishap. Evidence of renal involvement, however, persisted during the ensuing twelve months. A year later she became pregnant again and gave birth to an eight months baby without eclamptic symptoms. I have seen this patient again recently and there is very definite evidence of a chronic nephritis; there is considerable cardiac hypertrophy, raised blood pressure, albumin and numerous casts in the urine and her urea concentration figures are 1·1, 1·15 and 0·95.

CASE IV. D.A., *primipara*, *ætatis* twenty-eight. The history and onset of symptoms are similar in all respects to those of the previous patient, except that there was a mild eclamptic seizure shortly before onset of labour. In this instance, however, the urine and blood pressure were normal two weeks after confinement and the patient, seen seven months afterwards, showed no signs of renal damage.

The third group comprises those patients in whom pregnancy is superimposed on a preexisting nephritis. No particular comment is necessary in this group, as the sequelæ of pregnancy are but the signs in an exaggerated form that were present beforehand. Suffice it to state that the prognosis in these patients becomes increasingly worse in each succeeding pregnancy.

I have purposely omitted any reference to figures or percentages in regard to the incidence of after-effects in pregnancy toxæmias from personal investigation, as I feel this would be of little value or interest, considering the comparatively small number of patients under observation. But I have selected a few records amongst others which I think definitely subscribe to the view that there is a real danger of permanent renal damage following upon eclamptic and preeclamptic toxæmias. I have not seen any women who exhibit recurring toxæmia in successive pregnancies and who are entirely free from any renal changes in the interval; such occurrences, of course, are on record. The preeclamptic toxæmias which constitute the largest group, are interesting. Most of us have had the experience of

eclampsia occurring in these patients when everything appeared to be progressing satisfactorily, whilst others who have considerable œdema and albuminuria and who apear to be on the verge of eclampsia, pass through labour without any seizures. The latter type is in my experience the one that is likely to give rise to more serious sequelæ at a later date. The view is expressed by many that cardio-vascular disease, so-called essential hypertension, is the all important underlying factor in these conditions, but undoubtedly preeclamptic symptoms appear in many patients in whom most careful examination before or during the earlier months of pregnancy has failed to reveal any cardio-vascular changes. It is true that the pregnancy may reveal a latent hypertension, but this is a difficult matter to prove.

In conclusion a few remarks may be added in regard to the treatment of the toxæmias of pregnancy. This is, of course, largely prophylactic and the care and attention given to pregnant women in ante-natal clinics is a great advance in preventive medicine. Nevertheless, the majority of women looks to the general practitioner for care and guidance at these times and it cannot be too strongly emphasized that it behoves a practitioner to carry out as best he can the essentials of ante-natal care off his own bat. When toxæmic symptoms arise, the matter resolves itself largely into the medical treatment of the conditions present and the question of surgical interference to terminate the pregnancy prematurely. Much work has been done in recent years in regard to renal and hepatic functional tests and blood chemistry in these conditions. Though of undoubted value in many instances, especially perhaps in the nephritic toxæmias, they must be considered in conjunction with and not as substitutes for the clinical findings in individual patients. The treatment of these conditions calls for close cooperation between the obstetrician and the physician.

## SEQUELÆ TO THE TOXÆMIAS OF PREGNANCY.[1]

By GRANVILLE WADDY, M.B., Ch.M. (Sydney), D.O., B.Sc. (Oxon),

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IT was only by chance some ten days ago that I learned the subject matter of this evening's discussion. I had believed that it was to be upon the toxæmias of pregnancy and had set myself to the task of gathering thought and material for such a paper; under any circumstances my remarks would not be lengthy and are the fewer as the result of the confusion referred to.

As regards the eyes we may at once dismiss all sequelæ to the toxæmias of pregnancy but two: (i) defective vision, (ii) pathological conditions of the *fundi oculorum*, chiefly concerning the retina and the optic nerve. The two conditions are to a large extent interwoven, but do not necessarily overlap, because there may be some pathological change in the fundus without any apparent interference with the visual acuity, although the converse would not hold, namely defective vision without a pathological state of the fundus.

It would seem essential to mention the conditions which exist during the pregnancy in order to follow up what sequelæ they may have. I am not going to dwell upon detachment of the retina and a few other very rare conditions which are found, as I think they are somewhat beside the evening's discussion.

The main ocular complications of the toxæmia of pregnancy are those associated with eclampsia, those associated with preexisting nephritis, those associated with that toxæmia of pregnancy commonly termed the nephritis of pregnancy.

### Eclampsia.

The ocular symptoms associated with eclampsia usually take the form of blurred vision or an island scotoma over central vision. These symptoms may be fleeting, lasting a few minutes to days. The severest form of involvement is a complete amaurosis or blindness which is attributed to a sudden saturation, as it were, of the tissues of the retina, the optic nerve or the brain tissue with the toxin which is responsible for the other general symptoms of the eclampsia, fits, coma, raised blood pressure and so forth. The attacks may last a few days and are followed by complete restoration of vision. Amaurosis is said to occur in about 12% of patients with eclampsia. Examination of the fundi reveals no pathological findings; that is to say, the retina has no hæmorrhages, white exudate and so on as are found in the retinitis of pregnancy. There would appear to be no permanent defect in vision and no sequelæ, although there are some authorities who hint at the repetition of the ocular symptoms in later pregnancies, each time with an increase in the gravity of the visual defect and eventually some toll upon the retina and optic nerve. I believe, however, that little risk is run by the eclamptic of permanent injury to the vision by one or more attacks.

### Preexisting Nephritis Complicated by the Toxæmia of Pregnancy.

It is perhaps not for me to go into the complexities of the separation of the old standing nephritis with or without the toxæmia of pregnancy. I assume that should a woman suffering from a severe form of chronic nephritis of the granular type of kidney become pregnant, her affection could be so diagnosed as to be put into a watertight compartment with a diagnosis of chronic nephritis and pregnancy. Such a condition might have the picture of an albuminuric retinitis, some degree of optic neuritis, scattered retinal hæmorrhages and white, fluffy, cotton-wool

[1] Read at a meeting of the New South Wales Branch of the British Medical Association in conjunction with the Section of Obstetrics and Gynæcology on October 31, 1929.

patches, with or without some defects of vision. The patient's life would have been very seriously endangered by the nephritis without any pregnancy, but it would be fair to assume that the extra strain upon her kidneys would aggravate her condition and probably result in death. Provided she survived the pregnancy, I venture to think that no one would advise her to risk a further conception; indeed, I believe everyone would warn her against that and the obviously correct and legitimate course would be to urge sterilization.

As regards sequelæ, the longer the pregnancy is continued, the worse are the ocular lesions likely to become and the poorer the prognosis for the recovery of vision.

### The Nephritis of Pregnancy.

I hope I am correct in stating that the nephritis of pregnancy in varying degree occurs in 1% to 20% of pregnancies. One authority examined 935 patients with pregnancy nephritis and found 209 with retinitis, that is roughly 20%. These figures would indicate that from one in 200 to one in 2,000 pregnant women develope a neuritis of pregnancy.

In contrast to uræmic amaurosis there may be no defect of vision in the retinitis of pregnancy; there may be just a few or a lot of hæmorrhages, but not one of them involving the vital macular area; so, because the patient with toxæmia of pregnancy does not complain of defective vision, it must not be assumed there are no ocular involvements. The moral, therefore, is the ophthalmoscopic examination of the fundi.

In true retinitis of pregnancy which may occur without renal symptoms, the retina being poisoned while the kidneys are not yet affected, the sequelæ depend largely upon the three factors, at what stage the retinitis developed, its severity and how long after its appearance the uterus was emptied.

If premature labour be induced, the prognosis is much more favourable for retention or restoration of vision. If it be not induced, the prognosis becomes more grave.

Figures tend to show that, when vision begins to be impaired only in the last two weeks of pregnancy, recovery follows almost invariably. Of those described as being in the eighth month or there about when the retinitis commences, not one half recovered and several did not materially improve. Again, when this began earlier than was estimated, as the middle of the seventh month, when Nature did not interfere by bringing on a miscarriage and when the patient escaped with her life, it was only to remain blind forever afterward (Howe).

In later pregnancies the symptoms and signs may be repeated, each time being a little more intensified. One school of thought is for the induction of labour directly a retinitis of pregnancy is diagnosed; another school is more conservative and advises it only when the disease is severe.

The problem which appears to me more important, and one upon which I dare not speak as with authority, is the question of the inhibition of the subsequent pregnancies. We realize that not every patient who has a retinitis of pregnancy, must again get that in subsequent pregnancies, but it seems they are more likely to than those who have escaped the toxæmia. And each recurrence of retinitis renders the prognosis as regards vision much worse. I can recall three cases of complete blindness attributable to child-bearing as the result of recurrent attacks of retinitis, the end result being complete optic atrophy consecutive to retinitis. Another case I recall is that of a woman who lost her first conception which was associated with a retinitis. She was most anxious to bear a child, but was advised to avoid running the incidental risks. Disregarding the advice, she conceived, had a recurrence of the toxæmia associated with retinitis and died after the induction of labour.

It would seem inadvisable to make a hard and fast declaration prohibiting further pregnancies, but in such circumstances as it is permitted the duty of the obstetrician should be to examine the fundi every few weeks after the fifth month in search for signs of developing retinitis. Some of the patients with graver affections should be sterilized when the pregnancy is over in order to avoid further conceptions.

There is still one other complication of pregnancy which I shall briefly mention, an acutely developing optic atrophy consecutive to a large *post partum* hæmorrhage. All vision is at first lost, but some slight recovery in one or both eyes generally follows.

## TREATMENT OF EMPYEMA.

By H. SKIPTON STACY, M.D., Ch.M. (Sydney), F.C.S.A.,
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REALIZING some years ago the too great frequency of empyema as a chronic disease and the consequent necessity for more or less extensive plastic operations, I read most of what was written on the subject, only to find a great divergence of opinion as to the best methods of treatment.

A great deal of controversy has raged around the site of incision and the question of drainage. To me the questions raised were largely solved by the report of the Empyema Commission of the United States Army as a result of their investigations into the numerous cases which followed the outbreak of pneumonia and influenza in the United States troops mobilizing for the Great War in 1917-1918.

Discussion has always been rife as to whether the time-honoured incision over the sixth or seventh rib in the mid-axillary region could not be improved upon by going lower down in the mid-axillary line or by going round to the back below the scapula about the ninth rib.

If one adheres to the older method of drainage only, then it seems to me the verdict would rest with either the first or the third of those situations; the theoretical advantages of the second are ruled out by the fact that a tube inserted low down in the

costo-diaphragmatic sulcus may impinge against the diaphragm or be shut off from the main cavity by adhesions and thus cease to drain. But the situation is altered by the introduction of the Carrel-Dakin method of treatment as advocated by Graham and others.

First of all it is desirable to ascertain approximately the highest level of the pus in the position in which the patient will be subsequently nursed, that is, the semi-sitting position. I was once hopeful that the X rays could be relied upon to give us the desired information, but further experience has shown how difficult it is to interpret the shadows at times, so that I now rely upon the exploring needle inserted with the patient half sitting up.

The question of anæsthesia I will deal with later.

A small piece of rib is excised, preferably in the mid-axillary region at the highest level of the pus. The incision is kept away from the back if possible; otherwise the patient will lie on the drainage tubing. Most of the pus is evacuated together with any fibrinous masses; light adhesions causing loculation, if present, are broken down and a rubber drainage tube stitched to the skin with silkworm gut. Some modern tubes have a flange. I am not alluding to the Pollard type, rather to the one designed by Tudor Edwards, but one without a flange is quite suitable. It is wise to have a lateral opening near the end as well as a terminal one.

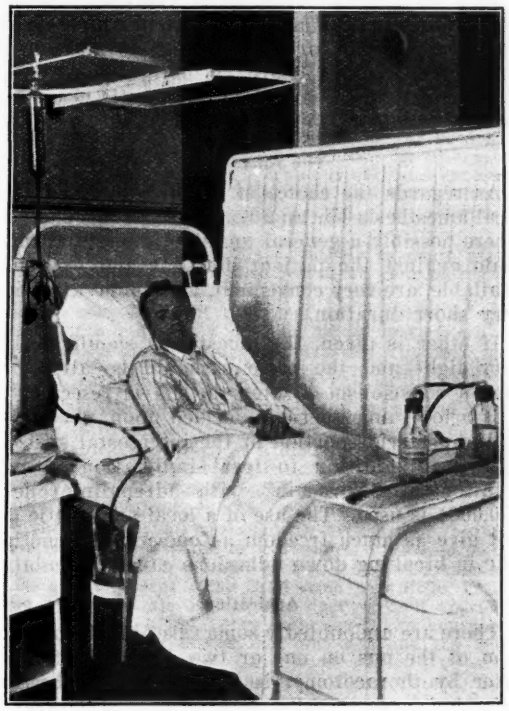
The muscles are sutured snugly around the tube, the wound is sutured and covered with collodion.

The calibre of drainage tube chosen is one that fits over the stem of a short Y-shaped glass tube; these should have been fitted beforehand (an apparently minor but necessary detail). The drainage tube is clamped until the patient's return to the ward, to prevent ingress of air. When he is in bed, two lengths of rubber tubing are fitted to the limbs of the glass, one going to the reservoir of Dakin's solution suspended from the bed top, the other going into a Winchester quart bottle suspended from the side of the bed, care being taken that the end of the tube is immersed in the 180 cubic centimetres (six ounces) or so of boracic acid solution which is in the bottle; this prevents entrance of air into the pleural cavity.

When the patient has recovered from the anæsthetic, treatment may be instituted. This consists of releasing the clip on the tube coming from the Dakin's solution and allowing 180 cubic centimetres (six ounces) or so to enter the pleural cavity. One hour later the clamp on the tube to the bedside bottle is released, the patient is encouraged to cough gently and the contents of the pleura are evacuated into the bottle. At the end of ten minutes this clamp is reapplied, the other clip is released and a fresh supply of Dakin's solution allowed to enter. The accompanying illustration shows the general arrangement.

After several days the amount of the antiseptic is reduced approximately by thirty cubic centimetres (one ounce) every four or five days.

The progress of the patient can be estimated by observing the bedside bottle; this progressively contains less and less pus. The temperature also comes down; it will probably be normal in seven days. When it is normal Wolfe's bottles may be used to assist in the expansion of the lung. In the treatment of a child toy balloons are better. Naturally all the fresh air obtainable is desirable, but balcony treatment should not be instituted too early, lest



the very essential details of nursing just outlined are sacrificed in the slightest degree. In three weeks or less a large size Jacques catheter may be substituted for the drainage tube, the use of Dakin's solution being continued. Probably the collodion will have to be reapplied every few days, for it is essential that air be prevented from entering the pleura. In five weeks there should be practically no discharge and the patient should be able to leave hospital for a convalescent home.

As in other operations for empyema the cut ends of the rib may be infected by the pus and osteomyelitis ensue; this may sometimes be prevented by smearing the rib with Horsley's wax before the pleura is incised.

If osteomyelitis should ensue, a sinus may persist until the sequestrum is thrown off or the wound may heal and then reopen.

Chronic empyema is mostly due to the persistence of sepsis which has the effect of causing fibrosis of the visceral pleura and thus preventing expansion of the lung; this in turn leads to the formation of a cavity with fibrotic walls.

From this it is evident that early and complete disinfection of the pleural cavity by an antiseptic that is both effective and innocuous, is the obvious treatment. Expansion and obliteration of the cavity are aided by the Wolfe's bottles, but the antiseptic treatment and the abolition of open drainage are the main factors. Dakin's solution has the additional advantage of helping to dissolve the fibrinous masses.

This treatment fulfils the conditions necessary for an antiseptic, namely, (i) time in which to exert its effect on the bacteria; as far as possible the whole of the infected area is bathed more or less continuously in the solution; (ii) the tissues are not injured by the antiseptic.

### The Anæsthetic.

As regards the choice of the anæsthetic, I think local anæsthesia has an advantage in some bad cases where possibly a general anæsthetic might turn the scale against the patient, but gas and oxygen, if available, are very convenient, as the operation is of very short duration.

If ether is given, the anæsthesia should be kept very light and the patient should be allowed to regain consciousness after the rib is resected.

If a local anæsthetic is decided upon, nerve block in the posterior portion of the intercostal spaces is needed in addition to local infiltration; a 0·5% solution of "Novocain" with adrenalin (one in 150,000) is used. The use of a local anæsthetic does not give as much freedom as one would sometimes like in breaking down adhesions causing loculation.

### Aspiration.

There are undoubtedly some cases in which aspiration of the pus on one or two occasions, followed later by thoracotomy, is advisable. In these the infections are generally streptococcal in nature; the pus is thin and there are no pleural adhesions. Preliminary aspiration favours formation of adhesions with consequent prevention of pulmonary collapse and "flapping mediastinum," when subsequently thoracotomy is performed.

There does not appear to be the same confidence in cure by aspiration, at any rate in adults, as there was in the few years succeeding the war. Hathaway[1] wrote an article commending it strongly. After aspiration he uses an injection of 2% solution of iodoform in paraffin.

### X Rays.

X rays are of undoubted benefit as a means of watching the progress of the patient; the lung shadow may be seen to occupy progressively more and more of the thorax.

### Summary.

I think our main mistakes in the past treatment of empyema have been a disposition to treat the condition as one of great urgency and, secondly, to drain as if we were dealing with an ordinary abscess; whereas, careful preliminary examination is very necessary, including bacteriological and perhaps radiological methods.

Drainage certainly is necessary, but of the closed type; mixed infection will not be altogether prevented by this, but it will certainly be minimized and, what is most important, pulmonary expansion will be favoured.

### Reference.

(1) F. Hathaway: "The Immediate Closure of Empyemata," *The British Medical Journal*, May 29, 1920, page 734.

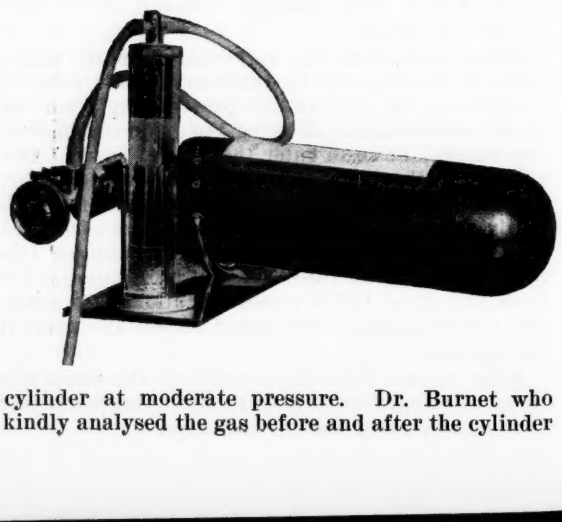
## THE USE OF CARBON DIOXIDE AND OXYGEN IN ASPHYXIA PALLIDA.

By W. G. CUSCADEN, M.D. (Melbourne), F.R.C.S. (Edinburgh),
*Honorary Infirmary Surgeon, The Women's Hospital, Melbourne.*

FOR some five years I have been using a simple apparatus for insufflation of Fallopian tubes (Rubin), which I have demonstrated at various meetings. It consists of a sparklet capsule with a simple reducing valve. From this I can lead off carbon dioxide at low pressure and have been using it on patients with slow shallow breathing after prolonged anæsthesia. The end of the tube is inserted into the patient's open mouth and the gas allowed to flow slowly. The rate and depth of the respiratory excursion increases at once. In many cases this appears to break a vicious cycle and the patient gets rid of the anæsthetic and improves from then onward.

I have tried this on babies suffering from *asphyxia pallida*, but I do not think it is safe. Though the amount of carbon dioxide is not great, the small capacity of the infant chest compared with the adult makes it possible to obtain undesirably high concentrations of carbon dioxide.

The Australian Oxygen Company has made for me the apparatus illustrated. The cylinder contains 8% carbon dioxide in oxygen. There is no tendency for the gas to separate into two layers in the



cylinder at moderate pressure. Dr. Burnet who kindly analysed the gas before and after the cylinder

had been turned up and down slowly, found there was practically no difference in the composition of the gas.

In a typical case of *asphyxia pallida* the baby should first be wrapped in a blanket, the air passages should be cleared of mucus and a catheter inserted in one nostril and the other nostril and mouth blocked. With gas flowing gently, there can be no rise above thirty millimetres of water to which level the valve is filled. When there is any rise, the gas blows through the water and the apparatus is practically fool-proof. The lung is inflated at a pressure of thirty millimetres with a mixture of 8% carbon dioxide in oxygen. Releasing the blocked nostril sixteen times a minute imitates artificial respiration. A firm hand over the abdomen is said to prevent inflation of the stomach which seems at this pressure to be more a theoretical than a practical consideration. The effect in some cases in which I have tried it, has been dramatic. The stimulus of the extra carbon dioxide to a sluggish respiratory centre caused prompt attempts at respiration.

The apparatus can also be used to cure post-operative hiccup. The respiratory centre has presented to it such a strong series of stimuli that it is unable to appreciate any minor stimulus.

In one case of post-operative hiccup in which I tried the apparatus, it seemed most effective.

I have no experience of the use of the apparatus for carbon monoxide poisoning or massive atelectasis for which it has been recommended.

## Reports of Cases.

### ERYTHRŒDEMA POLYNEURITIS (PINK DISEASE) TREATED BY ULTRA-VIOLET RADIATION.

By E. W. FRECKER, M.R.C.P. (Edinburgh), M.B., Ch.M. (Sydney),
*Kiama, New South Wales.*

BABY G.A., a male, aged ten months, came with an exceedingly harrassed mother who complained that the infant had cried unceasingly for almost two weeks and had taken practically no food for four days. The child had lost its happy disposition, was fretful, losing weight and slept but very little. There was acute constipation, but no vomiting.

On examination the child lay curled up in its mother's lap with the face buried, and feebly resented interference. The conjunctivæ were somewhat injected and there was quite evidently a condition of photophobia. The child pulled at its ears and the drums were somewhat reddened. There was evidence of erupting teeth with swollen gums, but no Koplik's spots were observed. The throat and naso-pharynx were healthy without adenoids. No enlarged glands were present. The skin was clammy and sweating without rash of any kind. The lung on the right side presented a few medium râles at the base and the heart sounds were normal. All the musculature was distinctly hypotonic, so that the infant could be doubled up like a rag doll without any complaint and felt peculiarly limp to handle. This hypotonia together with the tendency to lie curled up with the face buried, like a sleeping animal, made quite an unusual picture. A considerable amount of muscular weakness was also present. The temperature was normal, pulse and respiration rates were slightly raised. *Per rectum* hard masses of fæces were felt and the urine contained abundant uric acid crystals.

Repeated bowel irrigations and aperients procured the evacuation of hard, evil-smelling motions without relief. A doubtful history of pain on micturition led to X ray examination of the genito-urinary tract without any abnormality being revealed. By the end of the second week of the disease a small, sparse, papular rash appeared on the anterior surface of the chest and the hands, feet and nose were observed to be congested, hot, red and swollen. By the end of the fourth week, after various methods of treatment, the child was definitely very ill, refusing all food, crying almost continuously and steadily wasting. The diagnosis was confirmed at the Royal Alexandra Hospital for Children, Sydney.

An intensive course of ultra-violet therapy was at once instituted and all other treatment neglected. The treatment was thus commenced in the fifth week of the disease at which time no sign of improvement had as yet appeared and the patient seemed to be definitely on the downward grade. The source of radiation used was an alternating current quartz burner on a 240 volt circuit and exposures were given to the whole body, front and back, with the results shown in the following progress notes taken at the time.

On the first day of treatment with an exposure of two and a half minutes at a distance of 90 centimetres (36 inches) the front and the back were treated.

On the second day of treatment an exposure of three and a half minutes at a distance of 90 centimetres (36 inches) was made to the front and back. The child slept well from 10 p.m. until 3 a.m. and the mother stated that it was the best night the child had had for some weeks. He took a little notice of events going on around him.

On the third day of treatment an exposure of four and a half minutes was given at a distance of 90 centimetres (36 inches) to the front and back. The mother reported that the child had improved and that he had eaten three biscuits that morning.

On the fifth day of treatment an exposure of four and a half minutes was given at a distance of 75 centimetres (30 inches) to the front and back. A slight erythema of the back was present. The child cried very little, he was eating better and his bowels were open without aperients. He had slept for a few hours each night, two hours at a time. The swelling of the face was less and the hands and feet were not so hot. The head was still sweating, but the photophobia had improved. The child smiled for the first time in weeks.

On the tenth day of treatment an exposure of five minutes was given at a distance of 75 centimetres (30 inches) to the front and back. An interval of five days had been allowed to elapse on account of the reaction to the previous treatment.

On the thirteenth day of treatment an exposure of five minutes was given at a distance of 62·5 centimetres (29 inches) to the front and back. The child had had a relapse. He had cried all day long on the previous day and had taken no food. No sweating was present and the hands and feet were better.

On the sixteenth day an exposure of five minutes was given at a distance of 57·5 centimetres (27 inches) to the front and back. The child was still crying and sleepless and had had a croupy cough the night before. The temperature was 37° C. (99·6° F.), the first occasion on which a temperature above normal was recorded. The chest was full of rhonchi. Evidently an intercurrent infection had occurred. The child's weight was 7·5 kilograms (sixteen pounds fourteen ounces).

On the nineteenth day of treatment an exposure of five minutes was given at a distance of 62·5 centimetres (25 inches) to the front and back. No skin reaction was present. The child was much better. He was taking his food, sweating had ceased entirely and he was still constipated. He had slept for twelve hours the night before. Slight photophobia was present. His weight was 7·9 kilograms (seventeen pounds nine ounces).

On the twenty-second day of treatment an exposure of five minutes at a distance of 62·5 centimetres (25 inches) was given to the front and back. The child was bright,

was playing and was interested. He had been awake for only two hours the night before. He was eating well. Hypotonus was still pronounced. His weight was 7·7 kilograms (seventeen pounds three ounces).

On the twenty-fifth day of treatment an exposure of five minutes was given at a distance of 62·5 centimetres (25 inches) to the front and back. The child was nearly normal. He slept well and ate well, but his bowels were still constipated. His extremities were normal, except for the presence of hypotonus. His weight was 8·1 kilograms (seventeen pounds fourteen ounces).

On the twenty-eighth day of treatment an exposure of five minutes was given at a distance of 57·5 centimetres (23 inches) to the front and back. The child was quite well. He had slept all night. His weight was eight kilograms (seventeen pounds twelve ounces).

On the thirty-first day of treatment an exposure of five minutes was given at a distance of 57·5 centimetres (23 inches) to the front and back. The child was still constipated.

On the thirty-fifth day of treatment an exposure of five minutes was given at a distance of 57·5 centimetres (23 inches) to the front and back. The child was very well. The action of his bowels was improving. His weight was 8·7 kilograms (eighteen pounds fifteen ounces). Slight pigmentation had occurred. The patient was discharged.

With the exception of an intercurrent attack of mild bronchitis which was either an accident or the result of a negative phase induced by too heavy dosage, this record shows a continuous improvement with a clinical cure in four weeks, making the course of the whole disease nine weeks. Such a case emphatically suggests the great value of ultra-violet radiation in this rather rare and exceedingly troublesome complaint.

### Comment.

Some of the features of the disease point to an involvement of the sympathetic system, notably the hypotonus, the clammy, sweating skin with relaxed vessels in the extremities and the constipation. One of the current theories of the action of ultra-violet light is that it exerts a tonic effect directly upon the superficial ramifications of the sympathetic fibres in the skin—an effect which reflexly pervades the whole nervous system. We may quote from Pacini:[a]

> It is difficult to escape the conclusion that ultra-violet radiation is of all environmental radiations the most active in stimulating the sympathetic nervous system, through which distribution it reaches every cell of the body and promotes responses which have been recognized clinically in the treatment of many conditions with radiant energy.

This would seem an adequate explanation of the therapeutic effect.

In conclusion, in view of the physiological action of calcium and the acknowledged effect of ultra-violet radiation upon the blood content of this salt, investigation of the calcium reactions in this disease might prove fruitful.

### Reference.

[a] M. Luckiesh and A. J. Pacini: "Light and Health," page 179.

## DEATH DURING ANÆSTHETIC INDUCTION.

By R. W. HORNABROOK, M.B., Ch.B. (Adelaide), M.R.C.S. (England), L.R.C.P. (London),
*Melbourne.*

"OPEN confession is good for the soul." That may be, but it is not with that intention that I am writing these notes. Rather with the desire that others may not fail in the manner that I have failed.

One afternoon in August, 1929, I was called upon to administer a general anæsthetic for examination purposes to a lady in the professional rooms of a brother practitioner. It was to be a mere whiff. Upon arrival, I found my patient to all appearances the embodiment of good health and physically perfect. She was about thirty years of age. Her history was as follows. About four months previously she had a complete suppression of her menses which up to that time had been perfectly regular and normal. She was an unmarried woman and the medical man she consulted naturally informed her that the most common cause for such a condition was pregnancy. Was there any possibility of this in her case? This she denied, and quite correctly.

Upon arrival at the rooms, I found her already in the lithotomy position. I questioned her and examined her pulse. This was steady, regular and of good volume. She gave me the impression that she was in no way nervous and the only abnormality that I noted was a huskiness in her voice.

It is my routine practice never to induce anæsthesia in a patient in an abnormal position. I am a strong believer that the slightest abnormality may count during anæsthetic induction. However, I found on examination of the table that there was no rest for the legs; in other words, that the examination table was only two-thirds a table and the legs had to be bent on the abdomen in a lithotomy position. This position has nothing wrong with it, as long as the patient does not require to have a general anæsthetic administered.

This position, from experiments carried out upon myself and others, shows the systolic blood pressure to be thrown up from ten to twenty-five millimetres of mercury. The intestines, liver and stomach are forced up against the diaphragm and tend to embarrass the heart. In a patient who is conscious, this may mean nothing, but in the case of a patient to whom a general anæsthetic is to be administered, this is different. We all know that during anæsthetic induction under any form of general anæsthesia there is a tendency towards rise of blood pressure. This rise of blood pressure may be the last straw that breaks the camel's back in the case of a patient whose heart is below par. Not only did I attempt to place this patient under a general anæsthetic when in an abnormal position, but I failed in two other respects.

It is my routine to give eight milligrammes (one-eighth of a grain) of morphine and 0·43 milligramme ($^1/_{150}$ of a grain) of atropine to all adults before giving a general anæsthetic. I am a very firm believer in this preliminary small dose of morphine and atropine in spite of the adverse criticism advanced by some of my colleagues. I do not think that it is the morphine and atropine that are to blame in the case of those administrators who claim that it has disadvantages.

In this case I did not give morphine and atropine because it takes from half to three-quarters of an hour to get the full benefit of the morphine and atropine and the examination was wanted at once. In other words, I did not wish to delay either the patient or surgeon. In this I think that I was wrong.

My third mistake: I started the induction with chloroform. I did this because it was not my desire to run the risk of bringing on a laryngeal spasm which I thought might arise in view of the huskiness of the voice that was noticeable when the patient spoke. My desire was to deaden to a certain extent the laryngeal irritation with chloroform before starting upon ether.

I put a few drops of chloroform on the mask which was a Schimmelbusch with one layer of flannel. I held the mask about 7·5 centimetres (three inches) above the patient's face and then very gradually brought it down nearer the patient, so that in about two minutes it was about 2·5 centimetres (an inch) away. The patient had been talking to me and her last words were: "Oh, this is lovely!" Less than half a minute later she suddenly collapsed, like the shutting of a book.

There was never at any time the least sign of struggling or objection to the anæsthetic. There was no question about it, her heart had failed and she was dead.

For two hours we tried every means to restore, for two hours artificial respiration was kept up and a tube was passed into the larynx and oxygen administered. Massage of the heart was not attempted. In neglecting this I may be open to criticism, but it appeared to me too cold blooded and I do not know of any authentic case in which a patient has really survived this treatment.

Maybe the electric needle, as recommended by Dr. Lidwill and by which means he saved a new born infant,

might have done something and set the heart going again, but I doubt it.

The following are the notes as supplied by the pathologist who made the *post mortem* examination.

> The body was that of a well made young woman, 167·5 centimetres (five feet seven inches) in height. The face was livid, there was an abrasion over the heart.
>
> The heart was enlarged, especially the right ventricle which was distended with dark fluid blood, its wall was thin, the orifice of the right coronary artery was narrowed, the cavity of the right ventricle was much dilated.
>
> The left lung was adherent to the chest wall, there was a patch of old fibrosis and consolidation at the left base with dilated bronchi containing pus. The right lung was normal. There were some remnants of the thymus, the thyreoid was small. The liver was rather firm, the spleen was large and the follicles prominent. The stomach contained air, the intestines were normal. The mesenteric glands were slightly enlarged. The kidneys were firm, their capsules were adherent and their surfaces were subgranular. The pancreas and suprarenal capsules were fairly normal. The uterus was small, not pregnant, it contained a few small fibroids; there was a small cyst on the left ovary. The brain was normal.
>
> Death was due to cardiac dilation and right heart syncope under the anæsthetic.

I am strongly of the opinion that this patient might not have collapsed if I had not broken through my practice. This is the first case in over thirty-three years of anæsthetic work that I have lost a patient during induction or upon the table and I certainly think it ought not to have occurred. It was bad work or rather, should we not say, it was a grave error of judgement.

It is the small details that count in anæsthetic induction and I neglected mine.

If the patient had been quietly placed in the lithotomy position after induction, it would not have mattered, but to induce anæsthesia in a patient in that position, especially one who from the history given might be in a state of nervous instability and whose heart might be below par, was almost criminal.

There is also one other point and that is, we are not giving our patients a square deal when we give them "whiffs" in professional chambers and not on the operating table of a nursing home.

I trust that these few notes will prevent those who follow after me from making the mistake that I have made.

We say that it is by our errors we learn; maybe this is true, but let us remember that we can never regain a life once lost.

Maybe my patient had cardiac fibrillation; this is possible. It is also possible that the death would have occurred under any circumstances. It does not, however, excuse me from slacking up in my precautions and breaking through my routine.

# Reviews.

## COMPLEMENT FIXATION TESTS.

OF special interest to serologists is Kolmer's recent work, "Serum Diagnosis by Complement-Fixation."[1] In the author's words the book is essentially a summary of the clinical and laboratory investigations which he has made during the past nine years in serum diagnosis by complement fixation, not only in syphilis but likewise in the wide field of the bacterial, protozal and metazoal diseases of human beings and the lower animals and in the identification of blood and seminal stains, the detection of meat and milk adulterations and other soluble albumins. Much of the subject matter deals with original investigations carried out by the author and his collaborators. New methods and their practical application are described and in addition there are numerous references to the investigations of others.

Most of the names well known in serology are to be found, but surprise is felt that there is no mention or reference to the work of Griffiths, Scott and Eastwood, the results of whose investigations were made the subject of a special report by the Ministry of Health in England.

The book is divided into four parts.

In Part I the author deals with the principles underlying complement fixation and hæmolysis. As he points out, a knowledge of these principles is essential for the proper conduct of tests by serologists and laboratory assistants, as well as being of use to clinicians for the proper interpretation of results.

In the discussion on the nature and mechanism or serum hæmolysis and the phenomenon of complement fixation many interesting theories are put forward. The author's theory of the phenomenon of hæmolysis is that it is an intracorpuscular enzymic reaction in which the corpuscles are sensitized or rendered susceptible by the hæmolysin to an enzyme in the complement, the result of which is digestion of the stroma sufficient for the liberation of hæmoglobin.

The action of the amboceptor or hæmolysin in sensitizing the cells is to neutralize the inhibitory effects of the specific antienzymes naturally present in the corpuscles for their protection against complement enzyme.

In discussing complement fixing antibody and the Wassermann reaction Kolmer is of the opinion that sufficient evidence has been produced to indicate that the Wassermann reaction is produced by an antibody of the same kind as is responsible for other complement fixation reactions, although the source and production of this antibody is still obscure. That it is an antibody specific for the *Spirochæta pallida* does not, however, appear likely in view of the work of Seki who failed to remove antibody from syphilitic sera by adsorbing with emulsion of *Spirochæta pallida*. Treatment of such sera with Kahn antigen, however, and removal of the precipitates result also in the removal of complement fixing substance.

Kolmer's theory is that a lipoid-protein complex of the spirochætes of syphilis and yaws may act as a heterophil antibody (the Wassermann antibody) in man. The chief quality of this antibody is its ability to react with lipoids and especially lecithins in the precipitation and complement fixaton reactions of syphilis.

The antibody is produced with certainty only in syphilis and yaws, hence its high degree of practical specificity in the serum diagnosis of syphilis, though used with a non-specific antigen.

Part II is devoted to the principles of technique in complement fixation and is full of valuable information. Much more uniformity of results would be achieved by various serologists independently of the method of technique adopted, if more care were exercised in the preparatory stages of the Wassermann test and if more time and thought were given to the details of the technique used. This section of the book will well repay attention.

In Part III the technique of complement fixation methods is dealt with. The methods described for carrying out not only the Wassermann test but various other complement fixation tests, are those which the author has adopted as fulfilling the needs, enumerated by him, for a standardized technique.

Much of this work is well known, it having appeared in the *American Journal of Syphilis* some few years ago.

A great deal of investigation was carried out by Kolmer and his associates before the method now known as the Kolmer technique was adopted. The latter represents probably the most accurate method of any for performing the test and one from which consistent results are to be expected.

[1] "Serum Diagnosis by Complement-Fixation with Special Reference to Syphilis: The Principles, Technique and Clinical Applications," by John A. Kolmer, M.S., M.D., Dr.P.H., D.Sc., LL.D.; 1928. Philadelphia: Lea and Febiger. Royal 8vo., pp. 602, with illustrations. Price: $7.00 net.

It is less practicable because more laborious than others in use and for this reason has possibly not been so widely adopted as its merits otherwise would suggest.

Most serologists use now a quantitative method, but for practical purposes where large numbers of sera are being tested, no method will receive universal support in which more than four tubes for each serum to be examined are required. In the Kolmer technique six tubes are recommended. Preparation of the antigen as recommended by Kolmer is a tedious operation and there are other acetone soluble free antigens, as for example that of Bordet and Ruelen, which, while being easier to prepare, give most consistent and reliable results.

The technique of the complement fixation test in various bacterial mycotic and protozoal and metazoal diseases is also described together with the preparation of the various antigens required. The application of the complement fixation test to the identification of blood and seminal stains and to the identification of milk and meat adulteration makes the book of special interest to public health workers and those interested in medico-legal work.

Part IV deals with the clinical application of complement fixation tests. The specificity and sensitiveness of the reaction are dealt with and the interpretation of the results and the reactions to be expected in the various manifestations of syphilis are described.

The reaction in bacterial and other diseases in which complement fixation methods are adopted, is similarly dealt with.

A useful and well compiled index completes the work.

The book is recommended to all interested in serology as well as to those actively engaged in serological work. Study of the principles laid down by Kolmer shows them to be based on sound judgement and, though the author's technique may not be universally adopted, his work should do much to improve the standard of complement fixation work generally.

## A TEXT BOOK ON PÆDIATRICS.

PROFESSORS CHAPIN AND ROYSTER have revised their American text book of pædiatrics for the sixth time in twenty years and have succeeded in presenting the subject matter clearly and compactly.[1]

Modern infant welfare work is a prominent feature and it is of interest to note the value they place on high protein feeding in the treatment of babies suffering from bacillary dysentery and on lactic acid whole milk in artificial feeding for healthy babies. They subordinate the chemical side to the physiological aspect in the feeding of infants, preferring to depart from the breast milk standards when necessary in order to adapt the artificial feeding to the needs of the babies. They condemn attempts at home pasteurization of milk and insist that raw milk should be kept below 10° C. (50° F.) and that milk dilutions should be boiled just before they are given to the baby. Due emphasis is placed on the importance of insuring an adequate supply of water in health and in disease. Milk of magnesia is advocated as an aperient in preference to violent purgatives. The chapters on disturbances and diseases of the digestive system are particularly attractive.

They state that evidence gained by means of the various skin tests discloses the startling fact that by eighteen years of age 95% of the population has had at least some form of tuberculous infection and that tuberculosis in early life is primarily a disease of the lymphatic glands. An excellent account of the various tuberculous conditions is given. It is pointed out that the accessory nasal sinuses of children grow at a greater rate than was supposed and become infected with a frequency closely approximating the frequency of infection among adults. X ray examination is considered to be the most reliable diagnostic aid. In some instances drainage of the antra and of the ethmoidal cells may be promoted fairly satisfactorily by means of astringent applications, but in most cases a surgical operation is necessary.

The difficulty of nomenclature in pneumonia under the age of three years is overcome by describing "primary pneumonia of infants." This disease has pathological features of both lobar and croupous pneumonia and should be treated as lobar pneumonia. In the treatment of empyema it is claimed that aspiration should be employed only for temporary relief of dyspnœa, that incision and syphon drainage should be employed for the younger children and rib resection and drainage for the older ones.

Chorea is described as a neurotic affection with rheumatism and tonsillitis cited as antecedent causes. The classification of Tilney is adopted in connexion with epidemic encephalitis. A full account is given of the ketogenic diet in epilepsy and it is claimed that the epileptic attacks of a child who follows the diet honestly, are greatly reduced in number and in one-third of treated patients disappear entirely.

Erythrœdema is described under the name of "Swift's disease," but the authors are not definite as to whether the condition is an infective one or due to a food deficiency and the paragraph on treatment is very scanty.

The problems of dependent children and those of feeble-mindedness are treated at length and with great understanding, as one would expect, and statistical data on growth and nutrition abound throughout the book which is of interest to all doctors who are devoted to work among children. It is a great pity that there are so many mistakes in spelling, though, doubtless, these will be corrected when the book is reprinted.

[1] Diseases of Infants and Children," by Henry Dwight Chapin, A.M., M.D., and Lawrence Thomas Royster, M.D.; Sixth Revised Edition; 1928. London: Baillière, Tindall and Cox. Royal 8vo., pp. 690, with illustrations. Price: 30s. net.

## CANCER PROBLEMS.

WE have received for review a translation of a small French work on cancer by Dr. G. Jeanneney, said to be a practical *résumé* of the subject for general practitioners.[1] The costly campaigns against cancer have become familiar to all. Opinions are divided as to their practical value. If they result in the education of the general practitioner to recognize the disease in its early stages, much will be gained, provided that he does not attempt treatment by radium or X rays which taxes the resources of the trained radiologist to the utmost. Dr. Jeanneney is the head of the surgical section of the Bordeaux Cancer Clinic. He has set himself the task of giving information on the early diagnosis of malignant disease and also deals with the various methods of treatment. He has outlined the early signs and symptoms of the common forms of malignant disease and has defined the so-called precancerous states. He remembers on every page that he is writing for the general practitioner. No space is wasted on rare conditions or on those which require special methods of examination for their elucidation. He endeavours to hold the scales between surgical and radiation methods of treatment. If anything, his bias seems to be slightly away from radium, as when he damns with faint praise this method of treating cancer of the thyreoid gland. His views that both radium and X ray treatment of osteo-sarcoma are completely useless, are not shared by some Australian radiologists.

It is interesting to note that the French teaching concerning certain so-called premalignant conditions differs from the doctrines found in English publications. Chronic mastitis is regarded as a very common precursor of breast cancer. He recommends the removal of all breasts affected in this way and indeed of all mammæ containing innocent tumours.

In the text the author deals almost entirely with very early stages of malignant disease, yet in nearly every illustration he depicts cancers in an advanced state. This seriously reduces their value as a complement to the text. This book is a good exposition of an important subject and can be recommended to the attention of the medical practitioner.

[1] "Cancer: A Practical Résumé of the Subject for General Practitioners," by G. Jeanneney; Translated by John Gibson, M.C., M.A., M.D., and John H. Watson, M.B., B.S., F.R.C.S.; 1929. London: H. K. Lewis and Company, Limited. Crown 8vo., pp. 200, with illustrations. Price: 7s. 6d. net.

The Medical Journal of Australia

SATURDAY, DECEMBER 21, 1929.

## A Problem in Obstetrics.

AT a meeting of the New South Wales Branch of the British Medical Association held recently, the subject of the sequelæ of the so-called toxæmias of pregnancy was discussed. A report of the views of the several speakers will be found on another page of this issue. A great deal is taken for granted in connexion with this subject and it is probable that in the course of a few years much of the teaching of today will be discarded for doctrines based on biochemical evidence. Hitherto all attempts to differentiate the various forms of affections labelled toxæmia have been unsatisfactory. It is possible to induce a condition in animals resembling the albuminuria of pregnancy by certain chemical irritants and by some bacteria, but the resemblance is obviously but superficial and the mechanism underlying the appearance of albumin in the urine during pregnancy without any accompanying evidence of true nephritis remains an unsolved problem. A toxin has been postulated, but none has been demonstrated. No one knows the origin or the nature of the assumed poison and no one is able to trace the ætiology of the affection. The same doubt exists in regard to the condition often spoken of as the preeclamptic state or in regard to eclampsia. Dangerous as this group of affections is, the prognosis for the mother is sufficiently good to justify a serious consideration of the risks attending future pregnancies. All are agreed that the outlook is extremely bad after permanent damage to the kidney is ascertainable. The chances of a live child being born of a woman with chronic nephritis are notoriously small. Similarly the woman with progressive degeneration of the renal parenchyma has small hopes of bearing a strong baby. Less uniformity of opinion exists in regard to the prospects of a woman with albuminuria persisting after a pregnancy that has been complicated by serious metabolic disturbances. It is known that many women recover from severe eclampsia and have normal pregnancies at a later date. Even when retinitis and retinal hæmorrhages have occurred, it is by no means inevitable that there will be a repetition at a subsequent pregnancy. In view of the insufficiency of our knowledge of the causation and nature of these affections, it becomes a somewhat hazardous matter to prescribe a definite course of action for the protection of all women who have passed through a pregnancy complicated by one or other form of so-called toxæmia. The experienced obstetrician will usually be able to anticipate future trouble, although he may have some difficulty in setting forth the reasons for his conclusions.

In the course of the discussion several speakers expressed their general approval of the proposition that after an attack of eclampsia a woman should not subject herself to the risk of a repeated abnormal pregnancy for at least two years. This advice is certainly sound when there have been signs of profound changes in distant organs, especially the eyes, when the blood pressure is raised and when the renal filter remains somewhat defective. When the function of the kidneys is much impaired, when there are signs of progressive and persistent changes in the cardio-vascular system, when the woman does not recover her normal metabolic balance after many months of careful nursing and suitable treatment, the advice should be given that future pregnancies must be avoided altogether. It should be explained to her and to her husband that it is unlikely that a pregnancy would result in a live child, that the risk to the life of the mother cannot be gauged and that her prospects of health would be seriously impaired if she disregarded the warning.

It is easy to tell a patient or her husband that she must not become pregnant for a period of two years or that she must avoid pregnancy for the remainder of her life, but it is quite another matter to render that advice effective. A medical practitioner has the obligation of protecting his patients against foreseen injuries. He must realize that he is dealing with human beings who will often accept great risks. No one with experience of the world will rely on a promise of celibacy. Contra-

ceptive measures may be recommended, but it should be recognized that some persons will not apply them from religious motives, others will be careless or reckless and others will be unskilful in their application. Moreover, the obstetrician should temper his advice with wisdom, lest he unwittingly drives the husband elsewhere. In these days the use of contraceptive measures is understood by many persons of both sexes, but if these measures are recommended as temporary expedients, the obstetrician should follow Dr. Donovan's example and take steps to insure that they are properly applied. The problem is difficult of solution and each person will have to be handled in accordance with her or his mentality, education and scruples. From the strictly ethical point of view, it might be better to urge the castration of the male than any interference with the sexual life of the woman. When the prohibition of pregnancy is recommended for persistent and progressive dangers and particularly when eclampsia or other severe forms of the so-called toxæmias are repeated, operative sterilization of the woman becomes essential. We would emphasize the necessity of a confirmatory opinion being sought and obtained before so drastic a step should be taken.

## Current Comment.

### AYERZA'S DISEASE.

AMONG the more unusual diseases of the arterial system is the condition known as Ayerza's disease. It was described by Ayerza in 1901 and is characterized by sclerosis of the pulmonary artery and consequent hypertrophy of the right ventricle. It is due to infection by the *Spirochæta pallida*. The main clinical feature is a cyanosis of the face and this has given the disease the name *cardiacos negros* or "black cardiacs." The condition has recently been discussed and a case has been reported by Dr. G. L. S. Konstam and Professor H. M. Turnbull.[1]

The patient described by these two authors was a male nurse, aged forty-five years, who was admitted to hospital with a history of dyspnœa for eighteen months, worse on exertion and increasing in severity. His lips became blue and his feet swollen. He had hæmoptysis of slight degree on two occasions. The cyanosis, though severe, was not sufficiently deep to merit the term black. Œdema was present, but the heart was normal. The condition was regarded as being one of heart failure with normal rhythm, probably due to syphilis affecting the orifices of the coronary arteries. The presence of syphilis was determined by the occurrence of a reaction to the Wassermann test and the presence of perforation of the palate. X ray examination revealed no aortic enlargement. When prominence of the pulmonary artery was found on radiological examination, doubt was entertained as to the correctness of the preliminary diagnosis, but it was not until autopsy that the nature of the condition was determined. At *post mortem* examination the main findings were failure of the right side of the heart, syphilitic interstitial fibrosis of the lungs and extensive endarteritis of the pulmonary arteries.

The question which has to be considered is the nature of this interesting condition. In a monograph by Arrillaga, a pupil of Ayerza, published in 1913 and quoted by Dr. Konstam, the statement is made that the ætiological factors are chronic pulmonary diseases, asthma, chronic bronchitis, tuberculosis and pleural adhesions, in short, all disturbances which have as their final result a state of pulmonary emphysema. It is further stated that these processes evoke in a pulmonary artery, rendered sensitive by slow infections such as syphilis, paludism *et cetera*, or by intoxications, a sclerotic process which causes a physiological stenosis of the arterial tract. It must be pointed out in passing that a stenosis caused by a pathological lesion cannot be regarded as physiological. According to the description given by Arrillaga, it is the pulmonary condition causing the emphysema which causes the arterial changes. For example, in an asthmatic patient who suffered from syphilis and whose asthma was of such duration that he had developed emphysema, the syphilis would sensitize the cells of the *tunica intima* and the asthma would cause the endarteritis. Another view would be that it is the preceding process, the process resulting in emphysema, which renders the arterial tissue and the connective tissue of the lung more likely to react to the virus of syphilis or some other noxious agent. The "slow" infection in these circumstances would be the actual cause. Such a slow infection would be a syphilitic infection acting over a long period when the original treatment had been incomplete. In the case reported by the two authors there was no history of an ætiological factor which would cause emphysema, but one must have existed, for at autopsy the visceral and parietal layers of the pleura were both greatly thickened by a dense collagenous fibrous tissue and intermittently fused. In the upper part of the lower lobe of the left lung there was no abnormality except emphysema. Of these two views that implied by Arrillaga's statement must be rejected. Dr. Konstam states that in subsequent writings Arrillaga "insists more positively" that syphilis is the essential ætiological factor and that chronic cardio-pulmonary diseases play a subsidiary part.

Syphilitic infection is blood borne and the endothelium of the vessels will be first attacked. Dr.

[1] *The Lancet*, October 12, 1929.

Konstam refers to Professor Turnbull's work on the pathological changes in arteries and to his view that the thickening is almost entirely intimal. He points out that hypertrophy of the intima may lead to degeneration, particularly in older subjects and that by far the commonest form of intimal degeneration in the pulmonary arteries is a degeneration that is superimposed upon hypertrophy and is independent of inflammation. He also states that degeneration secondary to inflammation may occur on rare occasions when the pulmonary stem and large branches are affected by syphilitic inflammation. It can be presumed that when the vessel walls are affected by syphilis, direct extension will occur to the periarterial and so to the interstitial tissues. It would be expected that if the syphilitic virus affected the endothelium of the pulmonary arterial system as a primary agent in this condition, there would be evidence of involvement of the vascular endothelium in other parts of the body. This is exactly what occurred in the case under review: slight general atheroma was present. In discussing Ayerza's disease as an entity, Dr. Konstam states that many accurate macroscopical and microscopical descriptions of undoubted syphilitic pulmonary arteritis have been confirmed by Warthin and Elizaldo who demonstrated the *Spirochæta pallida* in the walls of such arteries, and that by this the existence of this entity has been placed on a sound footing. In the case under consideration no spirochætes were found. In the determination to regard this condition as an entity the pathological picture alone must be the deciding factor. The clinical picture will depend on the stage to which the arterial changes have advanced.

## POLIOMYELITIC INFECTION.

IN last week's issue reference was made to the histological changes produced by poliomyelitis and to some work on the subject by E. W. Hurst. Many authors have recorded their observations on poliomyelitis and many facts have been determined; some hypotheses have also been advanced.

It is generally accepted that infection occurs through the naso-pharynx. The virus has also been shown to be present in the tonsils of persons harbouring the disease. From the naso-pharynx the infection may spread to the brain either directly along the olfactory nerves, reaching the cranial cavity through the cribriform plate or it may be carried by the blood and lymphatic channels. The statement is sometimes made in text books that the former is the method which obtains, and that further spread takes place by the vascular system. If the spread takes place by the olfactory nerves, it remains to be determined at what point the vascular system becomes involved. On the other hand, if the infection takes place through the lymphoid tissue of the upper respiratory passages, involvement of the vascular system is easier to understand. It must be remembered, too, that the findings on *post mortem* examination are always those of a general infection as well as of anterior horn involvement. This was demonstrated quite clearly by Hurst. It would appear to be more simple for a general infection to occur if the virus were absorbed directly into the circulation than if it reached the circulation by way of the olfactory nerves and either the subarachnoid space and/or the tissue of the central nervous system. The changes found in the vessels of the anterior horns of the spinal cord show that the vascular system is certainly involved. The suggestion must also be considered that the anterior horn cells become attacked by the medium of the cerebro-spinal fluid. That the anterior horn cells can be influenced by the cerebro-spinal fluid is shown by the fact that serum administered by this route acts on the affected cells. The blocking of the vessels in the anterior horns, found at an early stage on histological examination, would make it impossible for serum to gain access to the affected cells if the serum were introduced intravenously. The polymorphonuclear leucocytes, found in the perivascular exudate, are brought by the blood stream and the adventitial cells are the result of multiplication which takes place locally. In regard to the lymphocytes, there has been, as Hurst points out, some difficulty. This need not be discussed at the moment. The point is that the cellular reaction undoubtedly marks the response of the tissues to an infection and according to Hurst's detailed description the exudate begins in the region of the central vessels and later extends towards the surface. This points to the advent of the virus to the anterior horn cells by way of the blood stream.

The presence of meningitis has an important bearing on this. Hurst points out that most authors have described meningitis as a conspicuous feature, that some regard it as the primary lesion which spreads along the vessels of the anterior fissure to the grey matter and that it has been held responsible for the early irritative symptoms of the disease. Only occasionally did Hurst find meningitis in the early stages, but the number of cells increased as the cord infiltration extended to the surface along the vessels of the white matter. In some cases not recorded in his communication, when the examination was made during the period when irritative symptoms alone were present, no degree of meningitis sufficient to account of these symptoms was found. He regards this as significant and promises to discuss it in a future paper. If it could be shown that meningitis was not essentially a part of the disease, it would be necessary to consider the advisability of changing its name. This is unlikely.

As far as the pathway of infection is concerned, it must be concluded that the vascular system probably plays the most important part. The reason why the anterior horn cells are picked out is not clear. When once the cells are definitely affected, they go on to total destruction. The movements over which they preside, are lost and the cells are removed by leucocytes and microglial cells.

# Abstracts from Current Medical Literature.

## PHYSIOLOGY.

### Renal Threshold for Chlorides.

IT is very commonly held that there is a renal threshold for chlorides in man, but the conception seems to rest more upon analogy and inference than upon precise observation. R. S. Aitken (*Journal of Physiology*, March, 1929) has made two experiments upon the human subject to determine whether such a threshold is a real thing. He draws the conclusion that in the human subject, if the physiological conditions of diet, water intake, muscular activity *et cetera* are rendered sufficiently uniform and if the body is gradually depleted of chloride by a chloride-free *régime* and forced sweating, then the response of the kidneys to variation in the concentration of chloride in the plasma can be defined as a reasonably smooth curve, relating plasma chloride concentration to rate of renal chloride excretion. In the two subjects used the curve was found to be steep above a plasma sodium chloride concentration of about 0·585%, indicating a large increase in excretion for a small increase of plasma concentration. Below about 0·555% of plasma sodium chloride it is horizontal, indicating a steady rate of excretion at about five milligrammes per hour down to at least 0·537%. The threshold is not a definite point, but simply a neighbourhood in which the relation of renal excretion to plasma concentration changes rapidly; below this neighbourhood the excretion is small and apparently steady, but it is not zero. It is suggested that the conception of renal threshold of chloride be abandoned.

### The Spleen in Traumatic Shock.

ROBERT M. MOORE (*American Journal of Physiology*, August, 1929) has determined the state of contraction of the spleen in cats in various stages of traumatic shock. In every instance the spleen was found to be extremely constricted so that its cut surface did not bleed and to have a weight ranging from 0·18% to 0·35% of the body weight and averaging 0·25%. These weights are similar to the lowest *post mortem* values obtained by Barcroft, Harris, Orahevats and Weiss in cats and correspond to the minimum weight of the completely contracted spleen. Evidently, then, a dilated spleen is not a factor in the production of the decreased blood volume which is characteristic of traumatic shock. The close relationship between the contracted state of the spleen and the contracted state of the vascular bed is discussed and the conclusion is reached that, as regards its smooth muscle, the spleen may be looked upon as a large and modified splanchnic blood vessel, the volume of which serves as an index of the state of contraction of the splanchnic vascular bed as a whole. The occurrence of an extreme constriction of the spleen in traumatic shock is interpreted as supporting the observations of other investigators, to the effect that the splanchnic vaso-constriction mechanism becomes highly active in shock in an attempt to maintain an effective blood pressure in the presence of a rapidly diminishing blood volume.

### Specific Nerve Impulses.

B. H. C. MATTHEWS (*Journal of Physiology*, March, 1929) has described a method whereby the electrical responses accompanying single impulses from skin and muscle receptors can be recorded under identical conditions by leading off from a nerve which branches, and a branch which supplies each type of receptor. Considerable differences exist between the electrical responses accompanying cutaneous and proprioceptor impulses. It is shown that it is possible to sort out impulses coming from muscle and skin by the differences in their electrical response. It is shown that the constitution of the nerves lends support to the view that conduction rate and fibre diameter are related. Whether the fibres from different types of sense organs in the skin are sufficiently differentiated in size to give impulses characteristic of each type is an open question. It does not seem unlikely that physical differences in the impulses, set up by different stimuli, may play a part in determining the effect they produce on the central nervous system, both as regards their transmission to the brain and also the reflex effects they evoke.

### Peptic Activity and Neutral Chlorides.

H. MACLEAN, W. J. GRIFFITHS AND T. A. HUGHES (*Journal of Physiology*, July, 1929) have studied the relationship of peptic activity to neutral chloride secretion during gastric digestion in man. They find that after ingestion of a test meal or dilute alcohol the peptic activity of the gastric contents progressively increases, reaching a maximum value at the end of secretory activity. The peptic activity of the resting juice has a high value comparable with that observed at the end of digestion. The curve of peptic activity is not related to the curve of acidity during digestion; a considerable degree of peptic activity may be present under conditions in which hydrochloric acid is not secreted by the stomach. Peptic activity is apparently always associated with neutral chloride in the gastric secretion; the increase in neutral chloride which occurs during digestion, is accompanied by a corresponding increase in peptic activity so that in a general way peptic activity runs parallel with sodium chloride secretion. Low concentrations of sodium chloride have a favourable influence on the digestion of egg albumin by pepsin, but this influence, in comparison with the influence of the reaction of the medium, does not seem to be an important one from the point of view of gastric digestion. In the present state of our knowledge we must suppose that the fluid which conveys pepsin from the cells into the stomach cavity, contains chlorine in the form of neutral chloride; in this way the association of peptic activity and neutral chloride secretion is explained. These facts also substantiate the former experiments of the authors, indicating the direct secretion of sodium chloride by the stomach.

### Venous Pressure.

J. A. E. EYSTER AND W. J. MEEK (*American Journal of Physiology*, October, 1929) have studied the effect of various procedures on the venous pressure in the dog. Venous pressures, along with arterial pressure and respiration, have been recorded simultaneously from the right auricle, the iliac vein and the external jugular vein. The most important result appears to be the relative independence of venous and arterial pressures. Extensive changes produced in the latter by the injection of adrenalin, stimulation of the central end of the vagus nerve, occlusion of the descending aorta and by other procedures, affect venous pressures to a limited degree only. The pressure in the auricle tends to rise slightly or moderately, while iliac and femoral pressures are little if at all affected. Considerable diminution in cardiac output by peripheral vagus stimulation produces a moderate rise in auricular pressures, but slight and inconstant effects on the venous pressures in the iliac and jugular veins. The results support the view of the comparative stability of venous pressures under approximately normal conditions and the limitation of pressure changes transmitted from the arterial system, due probably to the fact that the peripheral vascular bed may vary its capacity through wide limits.

### Physiological Leucocytosis.

W. E. GARREY AND V. BUTLER (*American Journal of Physiology*, October, 1929) have studied the effect of various factors on the leucocyte count under physiological conditions. A recumbent posture for one hour and a state of complete mental and physical relaxation reduce the leucocyte count to a minimum, the basal norm. On eighty subjects the basal count was between 5,000 and 6,000. Any variation in the basal count is a certain index of disturbance of the basal state. In a given individual the basal count is constant from day to day. A basal count of 7,000 or over in normal subjects is evidence of mental or physical unrest or discomfort. The largest possible meal will not cause the slightest increase in the basal leucocyte count, a crucial disproof of the existence of digestive leucocytosis. Passive or active postural changes raise the count instantly. An activity level of from 60% to 100% above the basal level is thus attained; this level is maintained with fluctuations, the extent of which is dependent upon the variations in muscular and mental activity of the subject. The increase in the leuco-

cytes is proportional to severity of the muscular exercise. In a quarter-mile race lasting less than one minute, the count has been raised to 35,000 per cubic millimetre. Mild grade physiological leucocytoses are due chiefly to an increase in the polymorphonuclear neutrophile cells. Very high grade leucocytoses may be characterized by a preponderance of lymphocytes. Acute cutaneous stimulation, as by a dash of ether, raises the count from 5,000 to 8,000 or even 10,000. Pain may raise the leucocyte count to 20,000 in a subject resting in bed and be mistaken to indicate infection. The changes are attributable to capillary shifts with the liberation of leucocytes trapped in unused capillaries.

### Intravenous Injections of Sodium Carbonate and Respiration.

R. GESELL, H. KREUGHER, G. GORHAM AND T. BERNTHAL (*American Journal of Physiology*, October, 1929) have studied the effects of intravenous injections of sodium bicarbonate on respiratory phenomena. Large doses produced profound effects on gaseous exchange and on acid metabolism. Oxygen consumption and carbon dioxide elimination in some experiments were increased from 200% to 300%. The carbon dioxide elimination was in great excess of that required by rate of oxidation and magnitude of the respiratory quotient. The lactic acid content of the blood was definitely increased. Assuming that all of the lactic acid combines with bicarbonate, the excess carbon dioxide eliminated above that accounted for by oxidations cannot be accounted for by the lactic acid. Since the usual efficiency of lactic acid in liberating carbon dioxide under other conditions is approximately 40%, the results support the suggestion that the increased flow of blood and increased carbon dioxide pressure of the blood produced by the addition of sodium bicarbonate to the buffer system of the blood, account in part for the increased expiratory quotient. The combined energy from oxidation and formation of lactic acid may be enormously increased. In one instance it increased from 1,037 calories per kilogram hour to 3,777. Of this amount 855 calories were derived from the formation of lactic acid.

## BIOLOGICAL CHEMISTRY.

### The Reaction of the Blood in Cancer.

HORACE MILLET (*Journal of Biological Chemistry*, May, 1929) reviews the various experimental methods for determining the hydrogen ion concentration of blood and discusses the application of these methods by other workers to determine the reaction of blood from human beings, both in the normal subject and in those suffering from cancer. The data reported by previous workers are very conflicting. In this investigation data were obtained by means of the glass electrode. Seven different normal human subjects were examined and twenty suffering from cancer of various organs. No difference in the hydrogen ion concentration was found. The average figure in the normal series and in the cancer group was 7·34.

### Deficiency Disease Produced by a Fat-Free Diet.

GEORGE O. BURR AND MILDRED M. BURR (*Journal of Biological Chemistry*, May, 1929) present the first paper of a series on the more general subject of the effect of fat in diet. New diets have been devised of high purity and extremely low fat content. Rats were used for the experimental work and it was found that a new deficiency disease, readily prevented or cured by the addition of 2% fatty acid to the diet, was produced by a diet very low in fat. Substances tried to effect cure were glycerol and the non-saponifiable fraction of fats, but these were quite ineffective. The amount of fat necessary to effect cure is very small, as little as three drops daily having a measurable effect. These authors find that with fat-free rations storage fat can be almost entirely eliminated and it seems probable that the amount of body fat can be controlled over a wide range by the addition of minute quantities of fat to the diet.

### An Exclusive Meat Diet and Carbohydrate Tolerance.

EDWARD TOLSTOI (*The Journal of Biological Chemistry*, September, 1929) discusses the carbohydrate tolerance of two healthy adult men who had both lived for one year on lean and fat meat exclusively. Glucose tolerance tests were carried out and both manifested a definite rise in blood sugar after the glucose. One manifested prolongation of the curve with glycosuria, the other only an increase in the height of the curve without glycosuria. After two to four weeks of a general diet these tests were repeated and the sugar curves manifested no abnormalities, while the urine was sugar-free. The explanation of this phenomenon is that the normal carbohydrate metabolism needs daily stimulation for good function. Should that stimulation be lacking, as with a low carbohydrate, high fat diet and also in prolonged fasting, it is temporarily incapable of handling large quantities of carbohydrate. In normal human beings this mechanism recovers fully after a return to the general diet. The author concludes that the data given in this paper are of practical importance in pointing to a probable fallacy in the interpretation of the glucose tolerance test, when the factors here discussed are not considered.

### The Effect of Diet on the Copper Content of Milk.

C. A. ELVEHJEM, H. STEENBOCK AND E. B. HART (*Journal of Biological Chemistry*, July, 1929) present the results of analysis of samples of milk from various cows and goats fed on normal rations or on a ration supplemented by copper and the results of analysis of composite samples of milk obtained from herds of cows in various sections of the United States of America. Precautions were taken to prevent possible contamination of the specimens by copper. The methods of analysis are given in full. These workers found that milk produced by cows on a normal ration contains about 0·15 milligramme of copper per litre and also that the copper content of cows' milk cannot be increased by giving to the cows sufficient copper sulphate to increase the copper intake five times. Samples of cows' milk collected from thirteen herds located in different States showed very slight differences in copper content. A limited number of analyses of goats' milk for copper did not indicate a decidedly lower amount of this element in goats' milk as compared with cows' milk and the copper content could not be increased by increasing the copper in the ration. The difference in the rate of anæmia production in rats on whole milk diets, as reported by various investigators, cannot, therefore, be due to a variation in the copper content of the milk when produced, but rather due to the contamination of the milk after production or to unknown sources of copper supply during the different periods of the rat's life.

### The Distribution of Copper in Blood.

BECAUSE no studies had been made directly on copper in hæmoglobin and because the possible presence of copper in the hæmoglobin molecule is of importance in the determination of the function of copper in hæmoglobin building, C. A. Elvehjem, H. Steenbock and E. B. Hart (*Journal of Biological Chemistry*, July, 1929) undertook an analysis of hæmoglobin. The first samples analysed were preparations of hæmoglobin from horses' blood in which copper was found by spectroscopic examination. Chemically the copper content of horses' blood is approximately 0·05 milligramme per hundred cubic centimetres of blood. The molecular weight calculated from the percentage of copper found in these samples would be twenty-five to fifty times the value found by Svedberg and Fahraeus in their recent work. Another fact indicating that copper is not a part of the molecule was the fact that the sample of hæmoglobin purified to the largest extent contained the smallest amount of copper. As the original work dealing with the importance of copper in hæmoglobin formation was conducted with rats, similar analyses were made upon samples of hæmoglobin prepared from rats' blood. The copper content of two samples gave an average value of 0·015 milligramme per gramme of hæmoglobin. The authors discuss the possibility of the copper being a contaminant. The distribution of the copper in similar blood was also studied and the corpuscle fraction of blood, whether prepared by centrifuging oxalated blood or defibrinated blood, was found to contain the largest portion of the copper.

# British Medical Association News.

## SCIENTIFIC.

A MEETING OF THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION IN CONJUNCTION WITH THE SECTION OF MEDICINE AND THE SECTION OF OBSTETRICS AND GYNÆCOLOGY was held on October 31, 1929, at 21, Elizabeth Street, Sydney, DR. F. BROWN CRAIG, the President, in the chair.

### Sequelæ of the Toxæmias of Pregnancy.

DR. H. C. E. DONOVAN read a paper on the sequelæ of the toxæmias of pregnancy from the obstetrical point of view (see page 878).

DR. L. H. HUGHES read a paper on the sequelæ of the toxæmias of pregnancy from a medical point of view (see page 881).

DR. R. G. WADDY read a paper on retinitis of pregnancy (see page 883).

PROFESSOR J. C. WINDEYER congratulated all three speakers on their excellent contributions. He was interested in Dr. Donovan's presentation of the subject, more particularly in regard to what had been done in other parts of the world. The various classifications of the toxæmias and their sequelæ had been set up on the basis of hospital records. It was dangerous to utilize hospital material in order to establish the prognosis of each form. In the hospitals the patients were usually those suffering from a more serious condition. The general practitioner did not send to hospital those patients who had the milder types. It therefore followed that the mortality from the various forms of affections was not accurately reflected in the hospital statistics. It had been stated that gestation represented a harmonious symbiosis of the fœtus with the mother. This harmonious living together at times was upset, although the reason for the disharmony was not always known. Women suffering from chronic renal trouble were more likely to be affected by these toxæmic conditions than were normal women. Professor Windeyer pointed out as an interesting fact that albuminuria of pregnancy without eclampsia was responsible for one-third of those deaths in child-birth statistically recorded under the heading "Albuminuria and Eclampsia." He had made a considerable study of the so-called toxæmias of pregnancy and had published his results a few years previously. From his investigations it was clear that many patients admitted for eclampsia had had signs of albuminuria of pregnancy or of nephritis at the time of their previous pregnancies. Eclampsia was much less common, but a much more serious affection in *multiparæ* than in *primiparæ*. It had been stated that the signs of toxæmias in a *multipara* were nearly always caused by chronic nephritis or by twin pregnancy.

In regard to Dr. Waddy's remarks concerning blindness, Professor Windeyer stated that this occurrence was rare in his experience. He advocated the application of clinical and biochemical tests whenever albumin was discovered during the course of pregnancy to determine whether or not some chronic renal defect was present. The risk for the woman was much greater in the presence of chronic renal disturbance, both in the early and in the late stages of pregnancy. A considerable amount of information could be elicited by a regular measurement of the blood pressure, particularly if the more modern renal function tests were carried out.

DR. F. S. HANSMAN added his congratulations to the readers of the papers. He considered that a routine method for the examination of all patients who had had signs of renal damage during pregnancy, should be introduced. The first examination should be carried out three months after the confinement, the second six months later and a third examination at the end of a further period of twelve months. By such means it would be possible to determine whether the renal damage was stationary or progressive. As the absorption of bacterial toxins played such a large part in ill health, he thought it possible that the onset of the toxæmia might be bound up in some way with the existence of a septic focus somewhere in the body. A leucocyte count and a Van den Bergh test should be performed at the same time as the renal function tests. He referred to a patient who had recently been examined by him four months after labour had been induced for severe eclampsia. The results of the renal function tests, though good, were by no means perfect. She had a leucocytosis of 12,000 and an indirect Van den Bergh reaction was obtained. It seemed to him that the leucocytosis, the Van den Bergh reaction and the onset of eclampsia may have had some relation. Dr. Hansman emphasized the importance of carrying out a urea concentration test and considering the percentage of urea with the quantity of urine excreted at each hour. Urea acted as a diuretic and if there were much fluid available, large quantities of urine might be excreted. When diuresis of this nature resulted, the percentage of urea in each specimen was often low. If the patient were reexamined after abstinence from fluid, a very high percentage of urea would be discovered, so that physicians should not be satisfied with a statement of the percentage of urea excreted.

DR. R. I. FURBER stated that in the earlier days of his practice he had attempted to steer his patients suffering from the toxæmias of pregnancy through their pregnancy until the fœtus was viable. He had found, however, that the risks were so considerable and the chances of a living child so bad that it would be better to induce labour early. He pointed out that one attack of eclampsia did not necessarily indicate that a subsequent pregnancy would be complicated in the same way. It was, therefore, better to terminate the pregnancy with a prospect of a normal subsequent pregnancy occurring. He agreed with Dr. Hansman that they should seek for a focus of infection, but he was very doubtful whether such a focus would often be found. The majority of eclamptic patients were particularly "well" women; they were usually young women with a good colour and no obvious signs of disease. It seemed unlikely that they would be harbouring a septic focus.

DR. J. K. MADDOX turned his attention to the sequelæ of the toxæmias of pregnancy as they affected the child. He expressed the opinion that the children possibly manifested some renal or hepatic defect and that thereby their health might be much impaired. He had noted in the literature of renal dwarfism that impaired development had rarely occurred in children whose mothers had had eclampsia. It had been stated that 40% of the children of eclamptic mothers showed some effect of this kind immediately after birth, in the form of fits, oligopnœa, purpura, albuminuria and so forth. He had searched the records of the Women's Hospital in order to ascertain whether this association was common among their patients. He had found, however, that it was not so. Children up to ten years of age who had survived eclampsia, had been examined by him from the standpoint of renal function, but no evidence of any permanent impairment had been discovered. He agreed with Dr. Hansman that it was advisable to examine the eclamptic women at regular fixed intervals. It had been stated by Gibberd that pregnancy itself was the most delicate test for renal function. As over 30% of eclamptics suffered from recurrence of toxæmia at a later gestation, it would in his opinion be too dangerous to wait for this test after an attack of eclampsia or other toxæmia. Some delicate quantitative test was needed in the interval. In this connexion he called attention to the very satisfactory results of the thiosulphate test, the details of which had recently been elaborated.

DR. E. LUDOWICI pointed out that there was another sequela which had not been mentioned. It took the form of an indefinite kind of invalidism without any fixed physical signs. At times it was associated with myocarditis or with other cardiac defects. Dr. Ludowici thought that the papers and the discussion showed clearly that midwifery was not a simple matter, but that it was as complicated as any branch of medicine or surgery. In the wards of a general hospital the student was required to write up a full history of the illness, but in obstetric wards it was extremely difficult to make a student remember that the

medical aspect of the patient's condition was very important and that the mere delivery of the child was not the only thing to be concerned with. He thought that much work had still to be done in regard to the part played by septic foci. It was usually held that the toxæmias were due to some extent to disorders of metabolism. It was possible that the increased concentration of sodium chloride in the blood was associated with toxæmia. The chief constituent of sweat was salt and he therefore suggested that by withholding salt from the diet and inducing some degree of sweating, the general metabolism of the body might be improved and the waste products removed more efficiently. It was his practice when toxæmia was suspected, to reduce the protein and salt intake with beneficial results.

DR. A. S. WALKER said that he was more particularly interested in the relation between renal insufficiency and toxæmia. He was satisfied that the primary cause of the toxæmia was more frequently to be found in the liver than in the kidney, although it might be difficult to detect a failure of hepatic function. It was well known that the liver had a very large reserve. When liver function failed through any organic cause, no signs could be detected until the greater part of the reserve was exhausted. It was also well known that liver cells had a considerable power of regeneration. He was satisfied that even though serious toxic changes took place in the liver, it was possible for repair to occur. He suggested that regeneration of the renal tubules might also take place. Although he realized that many physicians would not agree, he suggested that the condition of nephrosis should be distinguished from that of nephritis. He was satisfied that nephrosis as a degenerative process was a real entity. It was by no means uncommon for a patient to have œdema, much albumin and other signs of renal damage and for the renal function tests to reveal little disturbance. On the other hand, because the renal function tests did not reveal severe damage, it did not necessarily follow that renal recovery would take place. It was, therefore, very difficult to determine in many patients with kidney trouble what was going to happen. He agreed with Dr. Hansman concerning the necessity for repeated regular examinations. He asked Dr. Donovan if he could explain a chronic condition of thickening of the subcutaneous tissues not infrequently seen in pregnant women. It was similar to the appearance of the semiœdema seen after "Insulin" medication. It was not associated with albuminuria. It presented some similarity to myxœdema, but quite possibly it was of toxæmic origin.

DR. C. H. E. LAWES said that since it was suggested under certain conditions that further pregnancies should be forbidden, the practitioner would have to be prepared to advise his patients in regard to the method of prevention to be adopted. This was a practical matter. As a rule if a general practitioner told his patient that she should not have any more children, the husband called a few days later to inquire what method he should use. It was useless to give advice if the patient had religious scruples or if she held the opinion that it was wrong to employ mechanical means to prevent pregnancy. In these circumstances the question of operative sterilization had to be considered. The operation, however, was a serious undertaking and it would not always be possible to obtain the patient's sanction or that of her husband. The risks should always be explained and the responsibility for electing this method must be accepted by the husband. Dr. Lawes stated that when the question was put to him, he recommended the husband to use a condom.

DR. A. J. GIBSON had hoped that more might have been said concerning the other sequelæ of the toxæmias. It had been taught in years gone by that complete recovery followed provided that the patient had not suffered from nephritis before her pregnancy. The recent teaching was that even in the absence of all signs of previous kidney trouble, eclampsia was not infrequently followed by chronic nephritis. One author dealing with the subject of eclampsia some years previously in a paper had pointed out that in very many women there was a chronic focal infection in the apex of a tooth, in a tonsil, in the gall bladder, in one of the accessory sinuses or in the appendix. These foci of infection gave rise to a mild damage to the kidney, so slight that no signs or symptoms were produced until pregnancy occurred. The first sign was then the appearance of albumin in the urine. It was necessary to seek the focus of infection. Much assistance was often obtained from the history of the patient's previous health. The history should be taken with great care and thoroughness. Dr. Gibson called attention to the claim that had been put forward, that many women who had had severe toxæmia, were attacked by accidental hæmorrhage in a subsequent pregnancy. Experiments had been carried out on rats and other animals to determine the possible association of the two conditions. Renal damage had been induced by chemical and mechanical means. It had actually been found that severe hæmorrhage had occurred when the animals became pregnant and parturient. This question demanded very careful investigation. In the next place he discussed the question of how long the pregnancy might be allowed to continue when signs of toxæmia manifested themselves. He held the opinion that early interference was advisable if toxæmia had been present in a previous pregnancy. The greatest care should be exercised in determining the importance from a prognostic point of view of signs and symptoms and particularly of organic signs. He referred to the history of a patient who had symptoms of toxæmia, including raised blood pressure, albuminuria, headache and so forth. The fundi were normal. All the symptoms had disappeared in response to the usual treatment, but the blood pressure had remained high. It had been thought that the raised blood pressure was not sufficient justification for terminating the labour at four months. The patient was a young woman. A few weeks later all the symptoms had returned, including the albuminuria and retinal hæmorrhage had occurred and it had been necessary to induce labour. Dr. Gibson maintained that a number of these patients had some permanent eye trouble and some even became blind. He had made it a rule to require them to report every three months for two years after the end of the pregnancy. He forbade them to become pregnant again until all signs and symptoms had been absent for two years, but advised against further pregnancies even after this period.

DR. NEVILLE DAVIS said that the problems of the toxæmias of pregnancy belonged almost as much to medicine as to obstetrics. Many of his patients with renal affections improved when he restricted fluids and placed them on a low nitrogenous diet. He thought that the estimation of the urea concentration in the urine of a fasting patient was of greater diagnostic and prognostic value than the testing of the urine for albumin. If the urea in the urine passed after twelve hours of abstention from fluids were below 2%, he had grave doubts concerning the functional integrity of the kidneys. He suggested that the estimation of the urea concentration in all young women provided a useful starting point in the management of a toxæmic condition of pregnancy when it arose. With this information he was able to anticipate trouble and to apply prophylactic measures.

DR. G. L. TOMLINSON said that the discussion had indicated the necessity for cooperation between obstetricians, gynæcologists, biochemists, physicians and others to solve many of the problems connected with the toxæmias of pregnancy. It was also advisable in this connexion to have the cooperation of the pathologist who performed *post mortem* examinations. The changes in the kidney and in the liver were very similar to those seen in phosphorus and other irritant poisoning. In the liver, however, the necrosis was in the region of the central vein, not at the periphery of the hepatic lobules, as in phosphorus poisoning and in the toxæmia of pregnancy among sheep. In the severe toxæmias of pregnancy the one invariable condition was the trouble in the placenta which was at the root of the causation of accidental hæmorrhage. He was glad that Dr. Gibson had referred to the experimental work on rabbits in the production of accidental hæmorrhage. Various chemical substances, including sodium oxalate and uranium nitrate, had been injected into the animals which had then been allowed to become pregnant. At the twentieth day, about two-thirds of full term, the rabbits had again been injected with one of the chemical substances and had further received intravenous injections of *Bacillus pyocyaneus*. In thirty-five rabbits

accidental hæmorrhage had occurred, at times within a few hours.

If the symptoms continued for fourteen days in pregnant women without considerable improvement, the pregnancy, he thought, should be terminated. The likelihood of permanent damage depended not upon the seriousness of the symptoms, but upon the time they were allowed to continue. The time factor was the important factor. Contrary to what had formerly been taught, he maintained that the condition tended to recur in future pregnancies.

DR. F. BROWN CRAIG said that the papers and the discussion bore testimony to the enlightening advances in their knowledge of the toxæmias of pregnancy and their sequelæ. The introduction of antenatal supervision had resulted in a much better control over these conditions. James Young and Sim, of Edinburgh, had collected statistics to show that women who had slight albuminuria at one pregnancy, might suffer from the severest toxæmic states in subsequent pregnancies. From observations of over five thousand patients in one antenatal clinic he had formed the opinion that among the prophylactic measures one of the most important was the avoidance of constipation. Women were notoriously careless in this respect. By regular purgation it was often possible to prevent the appearance of the symptoms of toxæmias and of albuminuria during pregnancy. Women who were found to have albumin in their urine at the antenatal clinic, should be treated in hospital. In conclusion he referred to Professor Windeyer's admirable paper read at the Congress in Melbourne, which went to show that a low mortality rate followed this routine. It had been said that the child of a toxæmic mother had a high mortality rate and that the cause of death was often obscure. He had tested the urine of a few of these infants and had found that it contained large quantities of albumin.

In his reply Dr. L. H. Hughes agreed that antenatal care and repeated examination of the mother after the birth were very important prophylactic measures. He asked his patients to report to him every three months for a period of twelve months. While he admitted that in the antenatal supervision septic foci had to be sought, he was not convinced that they played a large part in the causation of the toxæmias or their sequelæ. In his experience it was relatively rare to discover such foci, although he admitted that the examination would have to be more searching than usual to exclude them definitely.

Dr. H. C. E. Donovan was pleased with Dr. Waddy's distinction concerning the types accompanied by retinal changes. Dr. Waddy had found that no retinal changes were encountered in the acute preeclamptic types and many changes in the chronic nephritic type. Retinitis occurred at times in women with the albuminuria of pregnancy as well as in those with true nephritis. Dr. Donovan disagreed with Dr. Ludowici in regard to the value of sweating and the giving of salt-free diet. He did not think that it did any good. Sweating merely concentrated the toxin. In reply to Dr. Walker he suggested that the subcutaneous thickening to which he had referred, was akin to myxœdema. The eclamptic state threw a great strain on the thyreoid gland and this might explain the appearance. To Dr. Lawes he said that the question concerning the method of prevention of conception was a relevant one. It was easy to forbid further pregnancies. If the contraindications were merely temporary, he advocated the use of either a condom or a check pessary. He made it a rule to give the patient minute instructions in regard to the use of the pessary and demonstrated to them how it should be inserted. If the contraindications to pregnancy were permanent, he advocated sterilization by operation. He pointed out that it was often very difficult to persuade the patient to follow the advice. They should recognize that in certain classes of the community the wife had little choice in these matters. The husband often manifested very little restraint and consideration for his wife. The patient should be followed up for a considerable time after having had toxæmic troubles. Focal infections should be sought. It was extremely difficult to prove whether or not sepsis was an important ætiological factor. He had no available statistics concerning the relationship between the occurrence of toxæmia and that of accidental hæmorrhage in subsequent pregnancies. In his series this had occurred in only 2% of the patients. He agreed with Dr. Brown Craig in regard to the importance of dealing with constipation.

Dr. Granville Waddy said that he had meant to convey the impression that 12% of all patients with eclampsia had some visual symptoms. The changes, however, were slight and permanent damage to the sight was rare. Blindness at times followed albuminuric retinitis. When this occurred the pregnancy should be terminated. If retinitis were repeated, some permanent defect became inevitable. He therefore advocated that the patient should be sterilized if more than one attack of retinitis occurred. The operation was essential in what he termed the hospital type of patient who would not or could not follow advice in regard to contraceptive measures.

## ANNUAL MEETING.

THE ANNUAL MEETING OF THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION AND OF THE MEDICAL SOCIETY OF VICTORIA was held at the Medical Society Hall, East Melbourne, on December 4, 1929, DR. B. T. ZWAR, the President, in the chair.

### Election of Office-Bearers and Members of Council.

The following were elected office-bearers for the ensuing year:

*President*: Dr. R. G. McPhee.

*Vice-Presidents*: Dr. Victor Hurley, Dr. B. M. Sutherland.

*Chairman of Council*: Dr. J. Newman Morris.

*Honorary Secretary*: Dr. F. L. Davies.

*Honorary Treasurer*: Dr. C. H. Mollison.

The President declared that the following had been elected members of the Council by the subdivisions: Dr. F. J. Bonnin, Dr. J. Cahill, Dr. S. C. Fitzpatrick, Dr. J. W. Florance, Dr. W. H. Godby, Dr. G. H. Guthridge, Dr. J. W. Dunbar Hooper, Dr. M. Jacobs, Dr. G. J. Ley, Dr. F. E. McAree, Dr. R. G. McPhee, Dr. Ian McNeil, Dr. D. C. Pigdon, Dr. J. H. Pestell, Dr. Walter Summons, Dr. W. G. D. Upjohn, Dr. Gerald Weigall, Dr. J. F. Wilkinson.

The President also announced that Dr. R. H. Fetherston, Dr. F. L. Davies, Dr. C. H. Mollison and Dr. J. Newman Morris were the *ex officio* members of the Council.

He also announced that the following had been elected by the general body of members and members of the Council: Dr. Stanley Argyle, Dr. A. V. M. Anderson, Dr. John Dale, Dr. A. P. Derham, Dr. R. M. Downes, Dr. D. M. Embelton, Dr. Allan Hailes, Dr. Victor Hurley, Dr. W. W. S. Johnston, Dr. L. S. Latham, Dr. J. P. Major, Dr. Allen Robertson, Dr. H. Douglas Stephens, Dr. B. T. Zwar.

The Council had coopted Dr. H. C. Colville, Dr. D. Rosenberg and Dr. B. M. Sutherland as members of the Council.

### ANNUAL REPORT OF THE COUNCIL.

The annual report of the Council, having been circulated, was taken as read and adopted.

THE Council of the Branch and the Committee of the Society present the seventy-fourth annual report of the Society and the fiftieth of the Branch.

### Election.

At the annual meeting, held last December, the following members of the Council and of the Committee were elected: Dr. Stanley Argyle, Dr. John Dale, Dr. Frank L. Davies, Dr. A. P. Derham, Dr. R. M. Downes, Dr. Allan Hailes, Dr. Victor Hurley, Dr. W. W. S. Johnston, Dr. L. S. Latham, Dr. J. P. Major, Dr. Allen Robertson, Dr. H. Douglas Stephens, Dr. B. M. Sutherland and Dr. B. T. Zwar.

The following members were elected to represent the Branch on the Federal Committee: Dr. Frank L. Davies and Sir George Syme. Later Dr. J. Newman Morris was appointed in place of the late Sir George Syme.

The following were elected to represent the subdivisions: Dr. F. J. Bonnin, Dr. S. C. Fitzpatrick, Dr. J. W. Florance, Dr. W. H. Godby, Dr. G. H. Guthridge, Dr. J. W. Dunbar Hooper, Dr. Morris Jacobs, Dr. G. J. Ley, Dr. F. E. McAree, Dr. Ian McNeil, Dr. R. G. McPhee, Dr. J. H. Pestell, Dr. D. C. Pigdon, Dr. D. Rosenberg, Dr. Walter Summons, Dr. W. G. D. Upjohn, Dr. Gerald Weigall and Dr. J. F. Wilkinson.

These members, together with the Trustees of the Medical Society of Victoria (Dr. C. H. Mollison, Sir George Syme, Dr. R. H. Fetherston and Dr. J. Newman Morris), the Director for Victoria of the Australasian Medical Publishing Company, Limited (Dr. W. Kent Hughes), and three additional coopted members (Dr. A. V. M. Anderson, Dr. Constance Ellis and Dr. D. M. Embelton), constituted the Council for 1929.

Later Dr. Frank L. Davies was appointed a Trustee of the Medical Society of Victoria in place of the late Sir George Syme, thus becoming an *ex officio* member of the Council, and Dr. H. C. Colville was appointed to the vacancy thus created.

The new Council elected as its President Dr. B. T. Zwar; Vice-Presidents, Dr. R. G. McPhee and Dr. Victor Hurley; Honorary Secretary, Dr. F. L. Davies; Honorary Treasurer, Dr. C. H. Mollison; Honorary Librarian, Dr. W. G. D. Upjohn; and Chairman of Council, Dr. J. Newman Morris.

### Council Meetings.

There were twenty-one ordinary meetings and one special meeting, at which the attendances were as follows:

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| Dr. Davies, F. L. | 22 | Dr. Pestell, J. H. | 17 |
| Dr. Zwar, B. T. | 22 | Dr. Weigall, G.[1] | 17 |
| Dr. Embelton, D. M. | 21 | Dr. Hooper, J. W. Dunbar | 16 |
| Dr. Guthridge, G. H. | 21 | Dr. Wilkinson, J. F.[1] | 16 |
| Dr. Hurley, Victor | 21 | Dr. Summons, Walter | 15 |
| Dr. Robertson, Allen | 21 | Dr. Hailes, W. Allan | 14 |
| Dr. Anderson, A. V. M. | 20 | Dr. Ellis, Constance[1] | 13 |
| Dr. McPhee, R. G. | 20 | Dr. Stephens, H. Douglas[1] | 5 |
| Dr. Rosenberg, D. | 20 | Dr. Colville, H. C.[2] | 4 |
| Dr. Upjohn, W. G. D. | 20 | Dr. McNeil, Ian | 4 |
| Dr. Latham, L. S. | 20 | Dr. Argyle, S. | 2 |
| Dr. Dale, John | 19 | Dr. Godby, W. H. | 2 |
| Dr. Derham, A. P. | 19 | Dr. Ley, G. J. | 2 |
| Dr. Downes, R. M. | 19 | Dr. Fitzpatrick, S. C. | 1 |
| Dr. Johnston, W. W. S. | 19 | Dr. Hughes, W. Kent[2] | 1 |
| Dr. Major, J. P. | 19 | Dr. Bonnin, F. J. | 0 |
| Dr. McAree, F. E. | 19 | Dr. Florance, J. W. | 0 |
| Dr. Pigdon, D. C. | 18 | Dr. Jacobs, Morris | 0 |
| Dr. Sutherland, B. M. | 18 | | |

*Trustees.*

| | | | |
|---|---|---|---|
| Dr. Mollison, C. H. | 19 | Dr. Morris, J. Newman[1] | 16 |
| Dr. Fetherston, R. H. | 19 | Dr. Syme, Sir George[3] | 6 |

### Council Subcommittees.

The following Council subcommittees were appointed by the Council. The first named acts as convener of the subcommittee and the President, Vice-Presidents, Chairman of Council, Honorary Treasurer and Honorary Secretary are *ex officio* members of all subcommittees. The quorum for each subcommittee was fixed at three, except that for the Ethics Committee, which was determined by its own procedure as printed:

*Organization.*—Dr. Allen Robertson, Dr. A. P. Derham, Dr. Constance Ellis, Dr. D. M. Embelton, Dr. B. M. Sutherland and all representatives of subdivisions.

*Ethics.*—Dr. J. F. Wilkinson, Dr. A. V. M. Anderson, Dr. J. W. Dunbar Hooper, Dr. L. S. Latham, Dr. J. P. Major, Sir George Syme and Dr. W. G. D. Upjohn. Later Dr. R. M. Downes was appointed in place of the late Sir George Syme.

*Medico-Political.*—Dr. D. Rosenberg, Dr. John Dale, Dr. R. M. Downes, Dr. D. M. Embelton, Dr. R. H. Fetherston, Dr. G. H. Guthridge, Dr. D. C. Pigdon, Dr. H. Douglas Stephens, Dr. B. M. Sutherland and Dr. J. F. Wilkinson.

*House.*—Dr. R. H. Fetherston.

*Science.*—Dr. W. W. S. Johnston, Dr. John Dale, Dr. R. M. Downes, Dr. Constance Ellis, Dr. Robert Fowler, Dr. Allan Hailes, Dr. K. Hiller, Dr. C. H. Kellaway, Dr. Fay Maclure, Dr. W. J. Penfold, Dr. C. Gordon Shaw, Dr. H. Douglas Stephens, Dr. W. G. D. Upjohn and Dr. J. F. Wilkinson.

*Medical Agency.*—Dr. W. Kent Hughes, Dr. A. P. Derham, Dr. R. M. Downes, Dr. R. H. Fetherston, Dr. Allen Robertson and Dr. Walter Summons.

*Library.*—Dr. W. G. D. Upjohn and Dr. R. H. Fetherston.

*Cancer and Public Questions Subcommittee.*—Dr. Allan Hailes, Dr. John Dale, Dr. A. P. Derham, Dr. R. H. Fetherston, Dr. C. H. Kellaway, Dr. L. S. Latham, Dr. Fay Maclure, Dr. D. Rosenberg, Dr. C. Gordon Shaw, Sir George Syme and Professor P. MacCallum, with power to coopt.

*Hospital Subcommittee.*—The Advisory Committee to the Charities Board and Dr. Victor Hurley, Dr. W. R. Boyd, Dr. A. E. Brown, Dr. H. C. Colville, Dr. A. P. Derham, Dr. John Dale, Dr. Constance Ellis, Dr. D. M. Embelton, Dr. R. H. Fetherston, Dr. R. R. Stawell, Dr. B. M. Sutherland and Dr. J. F. Wilkinson.

*Special Subcommittees.*

The following special subcommittees were apopinted:

*Public Health Subcommittee.*—The Executive, Dr. Walter Summons, Dr. John Dale, Sir George Syme and Dr. J. F. Wilkinson, with power to coopt.

*Nomenclature of Disease.*—Dr. Keith Ross, Dr. W. L. Carrington, Dr. D. Rosenberg, Dr. F. V. Scholes, Dr. D. L. Yoffa and representatives of the Queen Victoria, Saint Vincent's, Children's and Eye and Ear Hospitals. Later Dr. Eric Cooper was appointed in place of Dr. Ross (resigned) and Dr. W. L. Carrington was appointed Convener.

*National Insurance Subcommittee.*—Dr. J. Newman Morris, Dr. W. R. Boyd, Dr. R. H. Fetherston, Dr. Allen Robertson, Dr. D. Rosenberg, Dr. D. M. Embelton, Dr. B. M. Sutherland, with power to coopt.

*National Insurance with Medical Benefits.*—Dr. D. M. Embelton, Dr. D. Rosenberg, Dr. W. G. D. Upjohn and Dr. J. F. Wilkinson.

*The Advisory Committee to the Charities Board.*—Dr. Victor Hurley, Dr. A. V. M. Anderson, Dr. L. S. Latham, Dr. J. Newman Morris, Dr. R. G. McPhee, Sir George Syme, Dr. B. T. Zwar. Later Dr. J. F. Wilkinson was appointed in place of the late Sir George Syme.

### Appointments.

The following appointments were made:

*Bush Nursing Association.*—Dr. A. P. Derham and Dr. B. M. Sutherland.

*Free Kindergarten Union.*—Dr. W. Kent Hughes.

*The Representative Body.*—Representative, Dr. H. Douglas Stephens; Delegates, Dr. L. S. Kidd and Dr. Wm. Sloss.

*Executive Council, Victorian Baby Health Centres.*—Dr. R. M. Downes.

*Executive, Melbourne University Association.*—Dr. W. G. D. Upjohn.

*Big Brother Movement.*—Dr. W. Kent Hughes.

*Health Association of Australia (Victorian Branch).*—Dr. John Dale, Dr. C. H. Kellaway and Sir George Syme.

*Masseurs' Registration Board.*—Dr. R. M. Downes and Dr. W. W. S. Johnston were nominated for appointment.

*Melbourne Permanent Committee for Post-Graduate Work.*—Dr. A. V. M. Anderson and Dr. J. W. Dunbar

[1] Out of State.
[2] Portion of year only.
[3] Deceased.

Hooper with Dr. W. W. S. Johnston (Convener of Science Committee) *ex officio*.

*Victorian Institute of Almoners.*—Dr. J. Newman Morris, with Dr. Victor Hurley as Deputy.

*Lord Mayor's Fund.*—Dr. J. Newman Morris.

*Victorian Institute of Almoners.*—At the request of the Charities Organization Society, Dr. J. Newman Morris attended a conference, representing the Victorian Branch of the British Medical Association, and later he was appointed a representative on the executive of the institute. Dr. Victor Hurley was appointed deputy during the absence of Dr. Morris abroad.

*Lord Mayor's Fund.*—Dr. J. Newman Morris was nominated for appointment on the Executive of the Lord Mayor's Fund in an advisory capacity. This appointment was subsequently confirmed. Dr. A. L. Kenny was thanked by the Council for the interest he had taken in the past in conserving the interests of the profession on that fund.

*Masseurs' Board.*—At the request of the Secretary of the Public Health Department, Dr. W. W. S. Johnston was nominated to fill the vacancy on the Masseurs' Registration Board caused by the death of Dr. H. L. Murray.

*Annual Meeting, Winnipeg*, August, 1930.—Sir James Barrett was appointed a delegate. The second delegate will be appointed by the incoming Council.

### Membership Roll.

The number of members on the roll is 1,378, which is higher than that of any preceding year. During the year there has been a gain of 135 members (74 by election, 30 who paid arrears and 29 by transfer from other States). On the other hand, 125 have been lost (13 by death, 11 by resignation, 59 by transfer to other States and 42 who have allowed their subscriptions to fall two years in arrears), thus showing a net gain of ten members.

We have to record with regret the death of the following members: Dr. Fred Bird, Dr. P. J. Campbell, Dr. E. Champion, Dr. J. V. Higgins, Dr. Gavin McCallum, Dr. Hugh L. Murray, Dr. Fossey J. Newman, Dr. R. L. McAdam, Dr. O. Penfold, Dr. B. R. Richards, Sir George Syme, Dr. A. M. Wilkinson and Dr. J. Ramsay Webb.

### *Deceased.*

Sir George Syme.—The Council recorded its deep sorrow for the loss sustained through the death of Sir George Syme. It also recorded its appreciation of the great and enduring services which he so unselfishly rendered to the medical profession of Victoria, and expressed its profound sympathy with Lady Syme and her family in their bereavement. A special meeting, *in memoriam* Sir George Syme, was held in the hall on Sunday, May 12, when addresses were delivered by the President, Dr. B. T. Zwar, Dr. R. R. Stawell, Dr. A. L. Kenny, Sir Henry Newland (South Australia) and Dr. Gregory Sprott (Tasmania). The service closed with the sounding of the Last Post.

Dr. Fred Bird.—The Branch and the Council expressed its deep sorrow at the loss sustained through the death of Dr. Fred Bird and recorded its appreciation of the services which he rendered to medical education and to the medical profession.

Dr. J. Ramsay Webb.—The Council recorded its sense of sorrow at the loss of Dr. J. Ramsay Webb and expressed its deep appreciation of the services rendered by him to the Branch and to the profession.

Mr. Thomas Baker.—The Council recorded on the minutes its feeling of loss by reason of the death of Mr. Thomas Baker who had been a great benefactor to medical research. It sent its sympathy to the widow and to the Director of the Thomas Baker, Alice Baker and Eleanor Shaw Medical Research Institute.

Dr. R. L. McAdam.—The Council recorded its regret at the death of Dr. R. L. McAdam who had been a president of the Branch in 1898.

### Ethics Subcommittee.

The Ethics Subcommittee met regularly throughout the year. Some of the more important rulings were that:

A member was right in refusing information to the Repatriation Department with regard to a former patient who was an inmate of Royal Park, but he would be justified in supplying such information if permission were obtained from the Master in Lunacy.

It was undesirable for a medical practitioner to employ a nurse to give an anæsthetic when a doctor was available.

Ordinary fees should be charged for medical services to Girl Guides. This decision was previously given in regard to Boy Scouts.

No member should conduct a practice from the house from which a practitioner ineligible for membership of the Association recently conducted a practice, unless such member should have secured the approval of the Council after reference to the members of the subdivision concerned.

A medical practitioner who had viewed a practice and had not purchased, should not settle in opposition to the purchaser.

The rules with regard to ethical procedure were modified so as to bring them more into line with those adopted by the Federal Committee. These were confirmed by a special meeting of the Branch and with other rules were printed and distributed among members.

Many other matters relating to the interpretation of ethical rules and to differences between medical practitioners were dealt with.

The Committee has at present under consideration the ethical rules regarding dichotomy in its various aspects and will report its opinion to the Council at a later date.

### Organization Subcommittee.

The Organization Committee has been kept busy with routine matters throughout the year and the important questions considered were the following:

The uniform lodge agreement prepared by the Federal Committee for adaptation to all the Australian States has been carefully dealt with. It is based upon the agreement existing in New South Wales and is a much more satisfactory one to the profession than that existing in this State. Certain modifications were considered desirable in its application to Victoria and these alterations were approved and adopted by the Council.

An inquiry into the status of the paid medical officer to the mothercraft home established recently in Carlton disclosed the fact that payment for medical services was not a matter of arrangement between patient and medical attendant and, in consequence of this, the Council withheld its approval to a request that a special circular should be forwarded to members.

A *questionnaire* relating to the conditions of service to boarded-out children was sent to each medical officer of the Children's Welfare Department. The replies have been collated and recommendations agreed upon. These, however, have not been submitted, pending the completion of the investigation now being conducted into the working of that department by the Government.

The attention of the Council was directed to certain proposed contributing schemes whereby employees of firms, in return for a weekly contribution, were to be entitled to the gratuitous service of the honorary medical staffs of public hospitals, irrespective of the subscriber's income. The Council was opposed to such proposals and, as a result of representations, the proposals were not proceeded with.

An agreement satisfactory to the Council and medical officers at Yallourn has been entered into with the Committee of that hospital.

The following interpretations and determinations affecting lodge medical officers are brought before their notice:

When applicants for membership of a lodge have been examined by a medical officer, the applicants should be placed upon the examining medical officer's list for one quarter at least.

When a lodge medical officer is unable to visit a lodge patient immediately and another practitioner attends the case, the lodge medical officer is not responsible for the

payment of the fee to the practitioner so attending, unless he instructed the patient to visit such practitioner.

A lodge medical officer is not compelled to take a member on his list whose wife is a chronic invalid.

The wife of a lodge member is entitled to free medical attendance, although she has not been examined and passed by the medical officer.

A lodge medical officer can refuse to pass a candidate for membership of a lodge on account of unhealthy occupation.

A lodge secretary was informed by the central executive of the order that before the name of a member who had become unfinancial, was replaced on the medical officer's list, all arrears of salary had to be paid to the medical officer.

Your Council expressed the opinion that the flying doctor to the Australian Inland Mission should not be permitted to engage in private practice. This opinion was endorsed by the Council of the Queensland Branch.

In order to be prepared for a possible outbreak of influenza, a meeting of the metropolitan medical officers of health with the Organization Committee was held. It was resolved that: (i) In municipally controlled hospitals the patients should have the right to be attended by their own medical attendant; (ii) full-time medical officers in municipal hospitals should receive a minimum salary of £3 3s. per day, with board and lodging; (iii) part-time medical practitioners should receive £1 1s. per hour and *pro rata* payment for a longer period, the amount not to exceed £3 3s. per day; (iv) as medical officers of health would be called upon to do extra work, they should receive extra remuneration.

The Committee was informed by the Chairman of the Public Health Department that the routine duties of a medical officer of health did not include the treatment of any disease unless such was specifically mentioned in his agreement.

A conference was held with the Friendly Societies' Association at which it was resolved that extracts from the Wasley award should be inserted in the prescription books of friendly society members.

A conference of delegates from all subdivisions met in the Medical Society Hall on Thursday afternoon and evening of October 17, when a resolution was carried in favour of the creation of a meeting of delegates appointed by the subdivisions, which should take the powers of a general or special meeting of the Branch when matters of policy are under consideration. The Council was requested to draw up the proposed alterations in the constitution and submit these to a meeting of delegates and of members of the Branch. It was also resolved that a Federal committee, with executive powers, should be initiated. These matters are now being considered by the Council.

In answer to an inquiry from a society the Grand Secretary was informed that senile decay was a pathological condition and that a member so affected was entitled to sick pay. At the same time our members are advised to refrain from using such terms as "senile decay" or "senility."

The committee of a public hospital was informed that objection should be taken to the treatment of members of the naval forces in charitable institutions. The Defence Department had agreed with their members to provide them with medical and surgical treatment.

### Medico-Political Subcommittee.

A conference was held with representatives of the various pharmaceutical bodies who desired legislation for the suppression of unqualified practice. The Committee was requested by the Council to assist the Pharmaceutical Association in its attempt to suppress such practice.

Approval was expressed to the proposed amendment of the *Pharmaceutical Chemists' Act* providing that any person who dispensed or compounded any drug or medicine for fee or reward, should label the same with his name and address, together with proper directions for taking or using such drug or medicine.

Approval was expressed to a proposed amendment of the *Poisons Act*, making an infringement of the act infamous conduct in a professional respect. Approval also was expressed to a bill to remove from the Medical Register the name of any medical practitioner who might be deemed by the Medical Board to have been guilty of infamous conduct in a professional respect. In this way it was hoped that trafficking in drugs would be stopped.

### House Subcommittee.

A portrait in oils of the late Major-General Sir Charles Ryan, painted in Cologne and presented to the Branch by some of his professional friends, a portrait by Chevalier of the late Dr. Maund, founder of the Lying-in Hospital (Women's Hospital), lent by the Trustees of the National Gallery, and large photographs of the late Professor George B. Halford and of the late Professor Sir Harry Allen, presented by their relatives, have been received during the year and hung in the hall of the Branch. Many other photographs of past members have also been received and are now on the walls of the building and it is hoped to receive many more.

As a permanent record of all past Presidents of the Branch and of the Medical Society of Victoria, it has been decided to obtain as many of their photographs as possible and to place the collection in the library. It is hoped to have an almost complete record of our past Presidents.

The question of heating the building has received attention during the year, but much difficulty is being experienced in obtaining a satisfactory service at a reasonable cost. It is hoped that the subject will be finalized before next winter.

### Library Subcommittee.

As in previous years, a further increase has to be noted of the use of the books and periodicals by members.

While frequent use is made of the reading room, the facilities for borrowing books have been freely availed of. During the year 869 volumes were withdrawn for home reading, an increase of 221 over last year's figures.

One hundred and eighteen volumes of new books were added to the library during the year under review, one hundred and ten periodicals have been received currently and seventy-four volumes have been bound.

Two hundred and one bound volumes of periodicals possessed in duplicate or triplicate by the library, as well as a number of odd parts, were transferred to the library of the Walter and Eliza Hall Institute at the Melbourne Hospital. There are a number of duplicate volumes in the library which the Council will be glad to present to any subdivision, if it will make application to the Librarian.

A cabinet has been purchased to contain the card catalogue of the volumes in the library and the work of indexing and reviewing the catalogue is proceeding.

Books and periodicals have been presented to the library during the year by Mrs. R. Stirling, Dr. A. V. M. Anderson, Dr. Kent Hughes, Dr. E. A. Mackay, Dr. J. S. Mackay, Dr. J. Newman Morris, Dr. J. E. Nihill, Dr. T. R. H. Willis and by the Editor of THE MEDICAL JOURNAL OF AUSTRALIA to all of whom we express our thanks. We desire also to express our thanks for publications received from the library of the Surgeon-General of the United States of America, from the Henry Phipps Institute of Pennsylvania, the Philadelphia General Hospital and the American College of Surgeons.

The following journals were added to the library during the year: *The American Journal of the Diseases of Children, The Journal of the Cancer Research Committee of the University of Sydney.*

### Science Subcommittee.

The Science Subcommittee arranged the Branch and clinical meetings throughout the year. Seven monthly meetings, six special meetings and five clinical meetings were held. The following papers were read:

February.—Dr. Julian Smith: "The Cancer Problem." Treatment, illustrated by Canti film.

March.—Dr. Thomas Cherry: "Factors in the Localization of Tumours."

April.—"Suppurative Diseases of the Lung": Dr. W. J. Newing, from the physician's aspect; Dr. Eric Gutteridge, from the bronchoscopic aspect; Dr. C. G. Shaw, from the surgical aspect.

May.—Meeting held in the Thomas Baker, Alice Baker and Eleanor Shaw Research Institute—
Dr. John Fiddes and Dr. Charles Sutherland: "Experimental Asthma."
Dr. Geoffrey Kaye: "Studies in the pH of the Urine."
Dr. W. J. Penfold and Mr. Price: "The Refractive Index of the Cerebro-Spinal Fluid."
Dr. John Fiddes and Dr. W. J. Penfold: "Cardiac Failure in Diphtheria Experimentally Considered."
Dr. W. J. Penfold: "Experimental Infection with Hæmolytic Streptococci and Their Control."

June.—Dr. Basil Kilvington: "Some Surgical Impressions Abroad."
Dr. Edward R. White: "Notes on Gynæcology and Obstetrics Abroad."
Dr. A. E. Rowden White showed a film prepared by the Royal College of Physicians, London, recording the reconstructed experiments originally carried out by William Harvey, demonstrating the discovery of the circulation of the blood. He also showed a cinematograph film demonstrating peristalsis of the intestines, by Alvarez, of the Mayo Clinic, Rochester, United States of America.

July.—Sir Charles Ballance, of Saint Thomas's Hospital, London: "Certain Operations on the Brain, Including Some of Those Practised on Tumour of the Brain."

November.—Dr. Henry Searby: "The Treatment of Perforated Gastric and Duodenal Ulcer."

*Special Meetings.*

December, 1928.—Dr. Julian Smith: "The Cancer Problem." Research showing recent advances. Illustrated by cancer film by Canti.

April.—Week-end Meeting at Hamilton—
Dr. S. C. Fitzpatrick: "Hydatid of Lung."
Dr. T. G. Oliphant: "Acidosis in Childhood."
Dr. Norman Dale: "Obstetrical Observations."

May.—(*a*) Sir James Barrett: "The Responsibility of the Commonwealth for the Health of the Aborigines."
Dr. George Simpson showed lantern slides illustrating "Life and Conditions in Central Australia."
(*b*) Discussion on hospital policy.
(*c*) Adjourned discussion on hospital policy.

October.—Week-end meeting at Ballarat—
Dr. Ian McNeil: "Experiences in Practice."
Dr. J. C. Douglas: "Tarsorrhaphy."

The following clinical meetings were held: April, at the Austin Hospital; May, at the Melbourne Hospital; June, at Saint Vincent's Hospital; July, at the Women's Hospital; November, at the Children's Hospital.

In addition to the above, two special meetings were held on the same evenings as monthly meetings, for the purpose of adopting revised rules of the Branch.

### Country Subdivisional Meetings.

In response to a circular letter sent to each country subdivision, the majority of the answers indicated the desire to have meetings in the country to which all members of the Branch are invited, classed as Branch meetings. For the future such meetings will be special Branch meetings.

### Hospital Subcommittee.

After numerous meetings, the subcommittee submitted its interim report on the hospital policy of the Branch to the Council in March last and with a few amendments this was adopted and submitted to a special meeting of the Branch in April. This meeting adopted the greater part of the policy, but referred the clause approving of the provision of accommodation for intermediate wards under certain conditions in association with public hospitals back to the Council for further consideration. After further meetings of the subcommittee a special meeting of the Council was called for July 10, which considered the regulations of the Government providing for paying beds in public hospitals. It was resolved that before the general putting into practice of any regulations relating to community hospitals, this new departure in hospital administration should be fully tried out in selected institutions as an experiment. Pending the completion of financial arrangements for full community hospitals, the Council approved, provided that adequate accommodation for indigent patients was always available, that intermediate patients should be admitted to the present public hospitals outside the metropolis.

The wards in which intermediate patients are treated, should be open to the whole profession with adequate safeguards. Medical service in such wards should be subject to the principle of free choice as between doctor and patient and payment for such services should be a matter of arrangement between patient and doctor.

Further consideration was deferred until after the conference of representatives of subdivisions which was held on October 17.

### Medical Agency of the Branch.

This agency which started some twelve years ago, has not attained the position which had been expected by the Council, while the work in connexion therewith took up a great deal of the time of the office staff. When an opportunity recently offered to obtain an interest in an old established and well known medical agency in Melbourne on favourable terms, the Council decided to merge the Branch agency with that of Mr. W. Ramsay, of Lonsdale Street. The two agencies will in future be carried on at Lonsdale Street by a company registered as the British Medical Agency of Victoria Proprietary, Limited, with which is incorporated W. Ramsay. Mr. W. Ramsay will be Managing Director, with a small board of directors representing the Council of the Branch. Dr. C. H. Mollison was elected Chairman of Directors and Dr. R. H. Fetherston as the other member on the board.

In future no medical agency business will be conducted at the office of the Branch. The company commenced business on October 1 and it is confidently hoped that by this arrangement members will be assured of the best possible service and advice on agency matters, together with fair and honourable dealing. The members of the Branch are asked to give this agency their full support.

### British Medical Insurance Company of Victoria.

The company has continued to progress and expand most satisfactorily. Each year has seen a gratifying increase both in new business and in renewals.

A reserve fund sufficient for the risks undertaken has been built up and invested in approved securities.

Apart from the agreement for reinsurance with the Automobile Insurance Company of Victoria another agreement has been entered into with a large English company which has given specially favourable terms on account of the high class of risks.

The increased number of cars upon the road, in many cases in charge of careless and incompetent drivers, has increased the percentage of motor accidents and claims. It was owing to this and to the determination of the directors not to take any undue financial risks that they decided during the year to withhold the rebate previously allowed to members in motor insurance. The rebate is still given in other classes of insurance.

The terms of the policy given to members are still more liberal than other companies and at the same time the premiums are lower. No other company pays its policy holders for hire of cars while their cars are being repaired.

There has been a good increase in the number of members who have given the company their fire insurance business. It is the best and most profitable. The rebate of 10% is still allowed. The directors hope to obtain much more of this class of business.

The company was asked during the year to consider the possibility of undertaking insurance business known as medical defence, the object being to obtain more liberal terms than are now available for members. The Directors decided that such insurance was outside the sphere of the company's work and that the company's reserve could not be used for such risks. It is making full inquiries

into this matter and into the possibility of obtaining reinsurance, so that it may be able, if desired, to help the present Medical Defence Association.

### Federal Committee.

The Federal Committee met in Melbourne in April and in Sydney in September. For information with regard to the business transacted see THE MEDICAL JOURNAL OF AUSTRALIA, May 4 and October 19, 1929.

Dr. J. Newman Morris was elected by the Council as a representative of this Branch *vice* the late Sir George Syme and was appointed by the Committee as its Vice-Chairman.

The Federal Committee was asked to request the Repatriation Department to notify medical practitioners, when asked to supply information to the department with regard to illness of an ex-soldier, that by act of Parliament power is given to the Repatriation Department, with the permission of the Chairman of the Commission and of the senior medical officer, to disclose to the ex-soldier and ex-patient all the notes and confidential information so supplied.

Dr. J. F. Wilkinson was nominated by the Federal Committee to act as a representative on the Australian Committee to be appointed by the Federal Government to revise the British Pharmacopœia.

As a result of a special meeting of the Branch in May at which Sir James Barrett and Dr. George Simpson reported on the conditions of medical service in central Australia, with a suggestion as to how they would be remedied, a report was forwarded to the committee with a request to treat it as a matter of urgency and make representations to the Federal Government.

The Council expressed its hearty approval and pleasure at the determination of the committee to present the gold medal of the British Medical Association in Australia to Dr. W. H. Crago (New South Wales) as a mark of appreciation for the valuable work done by him for the medical profession in Australia.

The Council, in a letter to Dr. W. N. Robertson (Queensland), expressed its regret at his retirement from the committee and thanked him for the large amount of work he had done for the profession.

### Melbourne Permanent Committee for Post-Graduate Work.

During the past year the Post-Graduate Committee successfully organized several special courses. In August, 1929, a series of six lectures was delivered by Professor Hugh Maclean, of Saint Thomas's Hospital, London, who had been specially invited to Australia. These lectures were attended by 164 graduates and were very much appreciated by the audience. During the same period the annual refresher course was held, 31 graduates attending. This course which is an annual fixture for August, is still regarded by the Committee as its most useful function and yearly attracts graduates from all parts of Australia. In November, 1928, a course in obstetrics was held at the Women's Hospital, only six graduates attending, however, in spite of the attractions of residence in hospital and a very good programme.

The question of the advisability of holding a similar course this year (1929) in obstetrics is still under discussion. During the months of November-February a special course in pathology and anatomy, specially intended for candidates for the M.S. degree, was arranged. This was well attended and all members (eleven) appeared to be well pleased with the course. Another similar course in pathology and anatomy is now in progress. It is hoped that all these courses will be arranged for 1930 and that the members of the Branch will by their patronage assist and encourage the committee to this end.

Dr. J. W. Dunbar Hooper who had acted as Associate Honorary Secretary for nine years, tendered his resignation and Dr. W. W. S. Johnston was appointed in his stead.

The Council recorded on its minutes its appreciation of Dr. Hooper's great services for so long a period.

### Australasian Medical Publishing Company, Limited.

Dr. W. Kent Hughes resigned from the directorship of the Australasian Medical Publishing Company, Limited, and Dr. R. H. Fetherston was appointed in his stead. A subcommittee of the Council drew up a report on the financial position of the company. This report was adopted by the Council and was forwarded to the secretary and president of each of the Branches and to the secretary and directors of the company. The directors have effected considerable economies which should place the company in a more favourable position.

### Salaries.

Government medical officers.—In a communication to the Chief Secretary it was pointed out that while salaries of some officers of the public service had been increased, no increase had been made in the salaries of the Government medical officers. The Chief Secretary gave it as his opinion that the matter should be held in abeyance until a bill to deal with the classification and rates of pay of members of the public service had been dealt with by the legislature. The information as to salaries which had previously been submitted to the previous Chief Secretary, was forwarded with the request that this matter should receive further consideration.

Health officers.—A medical health officer and his colleague in a country town were advised not to accept a smaller remuneration than that recommended by the Commission of Public Health. The municipal council was asked to conform to that recommendation.

### Scale of Fees.

At the request of the Council the Radiological Section drew up a scale of fees for treatment by radium. This subsequently received the approval of the Council and of the Branch.

### Diabetic Control.

A scheme for controlling the diabetic mortality in Victoria was submitted by the Trustees of the Thomas Baker, Alice Baker and Eleanor Shaw Medical Research Institute to the State health authorities and to the Council of the Branch. The Council submitted the scheme to the staffs of all public hospitals and to country subdivisions for criticism and suggestions. On receipt of the replies the scheme was modified and approved. The Chairman of the Public Health Commission was notified that the scheme thus amended had been approved by the Council.

### Cancer Research.

The Council assured Professor Osborne of its sympathy with the movement to secure funds for the further research work in Victoria on the cancer problem; the Council expressed itself as prepared to assist the movement in every way possible.

A resolution of the Branch was forwarded to the Registrar of the University stating that the Branch was of opinion that Dr. Thomas Cherry's work on the cancer problem should be continued and that the Branch would support any movement to help financially or otherwise in this direction.

### Examination of Swabs, Sputa, et cetera.

A deputation from the Council waited on the Minister for Public Health and protested against a charge of 2s. 6d. being made by the Bacteriological Department of the University of Melbourne for the examination of all swabs, sputa *et cetera*.

This question has been reviewed by the department and now all specimens forwarded by medical officers of health and by medical practitioners who state that the patient is unable to pay, are examined without charge.

### Section of Anæsthesia.

An application by seven members for permission to form a section of anæsthesia was granted.

### Professor Berry Portrait.

The Council approved of a movement to secure a portrait of Professor R. J. A. Berry on his retirement from the Chair of Anatomy in the University of Melbourne. The portrait was unveiled in the School of Anatomy at the

University on July 19. Professor Berry also received a presentation as a token of esteem and appreciation of his services both as a member of the Council and President of the Association for two successive years.

### Embley Memorial.

The Council resolved to take steps to recognize the original research work in the use of anæsthetics carried out by the late Dr. E. H. Embley. As a result of an appeal to members of the profession, augmented subsequently by relatives and friends, a sum of £685 was raised. With this fund it is intended to establish a triennial E. H. Embley Memorial Lecture on the recent researches, principles and practices in anæsthesia. By permission of the Council of the University of Melbourne, a memorial tablet will be erected in the Wilson Hall. A tablet also is to be placed in the Medical Society Hall.

The fund provides also for a gold medal to be awarded annually to undergraduates in medicine, the recipient of such medal to be chosen by a competitive examination.

### Armistice Day.

On Monday, November 11, at 11 a.m., the President laid a poppy wreath upon the bronze memorial in the foyer of the hall in remembrance of the forty-two medical officers, members of this Branch, who lost their lives in the Great War.

### Aerial Medical Officer.

The appointment of a medical officer was first made two years ago and the first medical officer appointed was Dr. St. Vincent Welch, a Sydney graduate; then Dr. Spalding, a graduate of Melbourne, took on the office a few months ago.

The board of the Australian Inland Mission asked your Council to appoint a doctor as a member of this board and Dr. J. W. Dunbar Hooper was duly appointed. The board has shown a strong determination to work in harmony with the British Medical Association.

### Social.

On the eve of his departure on a six months' trip to America, a cheque was presented to Dr. J. Newman Morris, Chairman of Council, by members of the Council as an expression of their goodwill and esteem.

The recent graduates in medicine were entertained by the Council to afternoon tea at the Hotel Windsor immediately after their registration on Wednesday, September 18, when they were welcomed into the profession by the President, and words of friendly advice were given by Dr. Gerald Weigall.

A dinner was tendered on August 10 to Professor Hugh Maclean, of Saint Thomas's Hospital, London, who had come to Victoria to deliver a course of lectures on behalf of the Melbourne Permanent Post-Graduate Committee.

The Council sent a cable to London welcoming the suggested visit of Dr. Alfred Cox, Medical Secretary of the Association, to the Branches overseas and offering him hospitality during his visit.

### Visit of Sir Ewen Maclean.

Sir Ewen Maclean who, as Past President of the Association, came to Australia to attend the third congress, was entertained by the Branch at a dinner and at afternoon tea by the members of the Council.

The Council expressed its deep appreciation of his visit and the consciousness of the stimulus his visit had given to the Branch which, it believed, would be of lasting benefit. As one result of the visit of Sir Ewen the Council urged the Council of the Association to create an organization which would provide full information and facilities for overseas graduates wishing to do post-graduate work in Great Britain and on the continent of Europe. On leaving Victoria Sir Ewen presented his portrait to the Branch. This has been framed and hung in the library. Lantern slides of the Medical Society Hall and the interior of the library were added to his overseas collection.

### Congratulations.

Congratulations were sent to Sir Richard Stawell upon the knighthood conferred upon him by His Majesty the King, Sir Colin Mackenzie who was also the recipient of this honour, Dr. Ch. de Crespigny (Adelaide) and Dr. Charles Kellaway on election to the Fellowship of the Royal College of Physicians, Dr. J. H. L. Cumpston, C.M.G., on the honour conferred upon him by His Majesty the King, Sir George Syme on his election as President of the Melbourne Hospital, Dr. J. Newman Morris on his appointment as Chairman of the Board of Management of the Queen's Memorial Infectious Diseases Hospital, Dr. J. F. Wilkinson upon his election to the Council of the University, Dr. R. Marshall Allan upon his appointment to the Chair of Obstetrics in the University of Melbourne and to Mr. R. J. Love, Inspector of Charities, upon his appointment in New South Wales, at the same time expressing regret on his leaving Victoria. The Council expressed its appreciation of the cordial relationship which existed between him and the medical profession.

### Subdivisions.

#### *South-Western (Country) Subdivision.*

During the last twelve months the subdivision held four meetings, two at Hamilton, one at Warrnambool, one at Camperdown. At the Camperdown meeting a paper on "The Cervix" was read by Dr. R. Morrison. At the Hamilton meeting members were addressed by Dr. Bell Ferguson, State Director of Tuberculosis. The second meeting at Hamilton was one to which members of all subdivisions were invited. There was a good attendance; papers were read by members of the subdivision and discussed by visiting members. A full report of the proceedings of this meeting has appeared in the journal.

The further meeting was held at Warrnambool and took the form of a clinical evening and a discussion on medico-political topics.

The average attendance at these meetings was twelve out of a total membership of forty. Many members had to travel up to 80 miles to attend.

GEO. E. COLE,
Honorary Secretary.

#### *Goulburn Valley Subdivision.*

Six meetings of the subdivision were held during the year, the average attendance of members being fifteen. The attendance at the post-graduate meetings was especially good, with an average of twenty-two members present.

The meetings held were:

1. Annual meeting, at which the office-bearers were appointed. The chief subject discussed at the meeting was the question of *post mortem* fees and mileage.

2. One ordinary meeting, at which there was a discussion of the circular on the progress report of the hospital policy of the Council.

3. Two post-graduate meetings, at one of which Dr. J. Bell Ferguson lectured on "Tuberculosis Work in General" and Dr. Marshall Allan on "Eclampsia," and at the other Dr. Stewart Ferguson lectured on "Infant Feeding" and Dr. Harold Dew on "Hydatid Disease."

4. Two clinical meetings at which members of the honorary medical staff of the Mooroopna Hospital showed patients at the hospital, followed by a discussion of the cases.

ANNIE BENNETT,
Honorary Secretary.

#### *Geelong and District Subdivision.*

The Geelong Subdivision held six clinical meetings during the year at which lectures were given by:

1. Dr. R. G. McPhee: "Hospital Experience Abroad."
2. Dr. J. T. Tait: "Prostatic Obstruction."
3. Dr. Allan Hailes: "Intestinal Obstruction."
4. Dr. H. B. Devine: "Gall Bladder Surgery."
5. Dr. H. R. Dew: "Hydatid Disease."
6. Dr. Leslie Hurley: "Auricular Fibrillation."

Sir Charles Ballance gave an address at Dr. Devine's lecture. These lectures were well attended, there being twenty-six at Dr. Devine's, including four members from Ballarat. There were also several business meetings. The President (Dr. Fossey J. Newman) died in March and his position was filled by Dr. G. R. Darby.

J. E. PIPER,
Honorary Secretary.

*Eastern Suburbs Subdivision.*

During the past year four meetings were held in private houses.

Mr. Julian Smith demonstrated the Canti film of cancer research to a meeting of fifty members, while an innovation in the form of a meeting at which local members read papers, was a great success. Again about fifty members were present. The papers were read by Dr. John Gray on "Starch Indigestion," Dr. A. T. Langley on "Contingencies in Obstetrics," Dr. W. E. Summons on "Pernicious Anæmia" and Dr. K. H. Hallam on "The General Practitioner's Laboratory." Also films of medical interest were shown, including one produced by Dr. Sydney Crawcour, of Dr. J. Newman Morris demonstrating the method of injecting varicose veins.

Compulsory notification of diabetes was recommended after the scheme had been fully explained by Dr. Penfold.

It is manifestly apparent that clinical meetings attract wonderfully, particularly if films are shown, while medico-legal and political subjects are not popular, as shown by an attendance of twelve enthusiasts only to discuss the control of the admission of patients to paying beds in public hospitals and to elect a representative, delegates and office-bearers.

J. M. BAXTER,
President.
KEITH H. HALLAM,
Honorary Secretary.

*South Central Suburban Division.*

Meetings of this subdivision were at Dr. Aitchison's on May 1 and at Dr. Whittam's on August 29 and at Dr. Nyulasy's on September 11. In addition to subjects of local interest, the diabetic scheme, hospital policy and national insurance were fully discussed. The members appreciated the attendance of a member of the Council, Dr. D. Embelton, at two of these meetings. As many as twenty-three attended one of the meetings.

F. E. MCAREE,
Honorary Secretary.

*South-East (Suburban) Subdivision.*

On May 8 a meeting was held at Mentone, when Dr. G. B. Halford was elected President and Dr. D. C. Pigdon was elected Secretary in place of Dr. Frank L. Davies, resigned. Members endorsed the hospital policy of the Council except in regard to the creation of paying beds in public hospitals.

On September 13, 17 and 19 meetings were held at Oakleigh, Mentone and Malvern respectively for the purpose of electing delegates to the conference on October 17.

DOUGLAS C. PIGDON,
Honorary Secretary.

**Sections.**

*General Practitioners' Section.*

The section held three meetings at the Medical Society Hall. Dr. A. V. M. Anderson addressed members on "The Responsibilities of Medical Practice and Medical Defence." Dr. A. N. McArthur gave an address on "The Splitting of Fees." Dr. Sydney Crawcour gave a cinematograph exhibition of films, including medical and topical subjects. These meetings were well attended and the discussions were keen.

G. H. GUTHRIDGE,
Honorary Secretary.

*Ear, Nose and Throat Section.*

This section was formed in November, 1928, and has held five clinical meetings in the year. There are thirty-six members of this section.

ERIC GUTTERIDGE,
Honorary Secretary.

*Physiotherapy Section.*

Five meetings of this section were held and papers read by the late President of the section, Dr. Hugh L. Murray, and Dr. Sydney Pern.

GERALD R. BALDWIN,
Honorary Secretary.

*Ophthalmological Section.*

Five meetings have been held during the year. Several papers have been read, but most of the meetings have taken the form of clinical evenings. An agreement with regard to the *Opticians' Registration Bill* has been arrived at with the Victorian Optical Association. The Federal and State Governments were advised that this section was of the opinion that those responsible for the navigation of vessels should have to pass an examination in vision conducted by a reputable oculist.

F. J. B. MILLER,
Honorary Secretary and Treasurer.

*Section of Neurology and Psychiatry.*

The section has had two meetings during the year.

On June 24 Dr. S. V. Sewell, Mr. Alan Newton and Dr. J. Kennedy read papers on "The After-Effects of Head Injuries." An interesting discussion followed.

On August 13 a clinical evening was held at the Receiving House, Royal Park. Dr. Henty demonstrated cases of *dementia præcox*, Dr. J. K. Adey read a paper on "The Management of *Dementia Præcox* Cases," Dr. R. Ellery demonstrated pathological specimens.

H. F. MAUDSLEY,
Honorary Secretary.

In conclusion the Council desires to express its appreciation of the work done during the past year by the subdivisions, sections and Branch.

On behalf of the Council,

B. T. ZWAR,
President.
FRANK L. DAVIES,
Honorary Secretary.

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**Induction of President.**

DR. B. T. ZWAR introduced DR. R. G. MCPHEE as the President of the Branch for the year 1930. He was sure that the choice of the Council had been a most fortunate one. Dr. McPhee had taken a keen interest for many years in all that pertained to the welfare of the Branch and of the medical profession. His regular attendance at the meetings of the Council, at great inconvenience to himself, was evidence of this. Dr. Zwar wished him a happy term of office.

Dr. McPhee thanked Dr. Zwar and the members of the Council for having elected him to the important office of president.

**Portrait of the Late John Williams.**

DR. B. T. ZWAR said that it was a great privilege to have been authorized to ask the President to accept a photograph of the late John Williams who had been President of the Victorian Branch in 1887, and in this way to do honour to a great teacher in the State of Victoria. John Williams, as others would inform them better than he could, had been the pioneer of clinical teaching in the medical school. He was a great and most lovable man in every way. The photograph depicted him wearing a rose. He was a great rose lover. Dr. Zwar was glad that his daughter and his son had honoured the members of the Branch with their presence. They would

see that their father's colleagues were mindful of his influence.

DR. FELIX MEYER said that to most of them John Williams was little more than a name, but to those who had known him as he lived, that name stood for a wise and able physician, a great teacher, one in the first rank of clinicians. With his election on the staff of indoor physicians at the Melbourne Hospital had begun an epoch-making era of clinical teaching with an influence which had lasted down to the present day. His faculty for teaching, his mental equipment, overshadowed that of his colleagues, good physicians as they were and with every desire to teach. He was a man of outstanding personality, handsome features, clear, steady eyes, with a splendid head set on a big body. Agamemnon they had called him. He had a genial manner; he was in all ways likeable. To his teaching he brought a great experience, a thoroughness of investigation and a transparent honesty. Darwinian in his method, he collected all possibly ascertainable facts and related them. His power of induction was great, his style was luminous, concise, convincing. He had set no traps for students; he had drawn out of them all they knew; he had been kindly and helpful. He emphasized the importance of a knowledge of pathology. He had followed up his patients to the *post mortem* room, where his classes had the great advantage of listening to discussions between their physician and another great teacher, Harry Brookes Allen, the illuminating comment of the one on the other's text, occasionally representing a difference of opinion, all to the good.

John Williams was to medicine in those days what John N. Fitzgerald was to surgery; the two men, each big in his way, had much in common and they were good friends, often seen at the same clinic, medical or surgical. The student of today could not realize his debt to this great teacher. His was the heritage of methods and principles, the legacy received from this first of Melbourne Hospital clinicians and handed down through two generations of teachers, household names among them, teachings enlarged and lit by their own individualism and bearing their valuable influence.

It was an excellent thing, it was a wise and fitting thing, that they should remind themselves of those who had made history for their profession, that they should keep in gracious and grateful memory their teachers who had consciously or unconsciously shaped their courses in their great adventure. He was glad to have had the privilege of paying his tribute to the memory of John Williams and he was sure that the members of the Victorian Branch, both those who had known him and those who had known him only by name, would appreciate the spirit that dictated the presentation of this portrait by Dr. Zwar of one who had made great history and great traditions for their profession.

SIR RICHARD STAWELL said that John Williams had been the determining influence in his own career. His method of teaching insisted in the thorough investigation of physical signs and their systematic interpretation, in spite of the comparative lack of knowledge in those days of the causation of disease. Medicine then had taken not much notice of causation and it might be said that in this respect they had been in the slough of despond, whereas at the time of speaking they were climbing the hill of difficulty. There was a tendency to overlook function and to concentrate on structure; John Williams had excelled in the correlation of clinical teaching with morbid anatomy and often he would be found in the *post mortem* room discussing knotty problems with the late Harry Brookes Allan, disagreeing often, but proving always that he could disagree without being disagreeable. There was something about the character of John Williams which was finer even than his teaching. His scientific mindedness, honesty of thought and expression and methods of clinical examination had laid the foundation of all that was good in the Melbourne Medical School.

DR. R. G. MCPHEE accepted the photograph on behalf of the Branch.

### President's Address.

DR. B. T. ZWAR then delivered his address (see page 874).

A vote of thanks to Dr. B. T. Zwar was moved by Dr. A. L. Kenny and seconded by Dr. L. S. Latham and was carried by acclamation.

A vote of thanks was moved by Dr. Victor Hurley to Dr. Constance Ellis, the retiring member of Council, for her valuable services. This was seconded by Dr. J. W. Dunbar Hooper and was carried by acclamation.

## Obituary.

### ROBERT LOUIS McADAM.

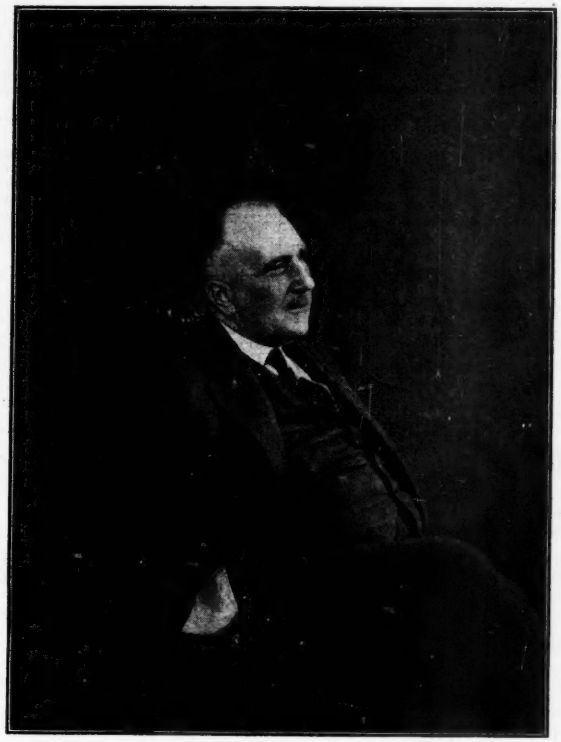
IN days gone by learning was valued for its own sake and a man was held to be educated if his store of knowledge penetrated far beyond the limits of his immediate calling. Culture and refinement were accorded attributes of a gentlemen in that past generation. Today the great majority of those who adopt one of the liberal professions, has little leisure or inclination for such accomplishments or for a gentle consideration for others. In the bustle and hurry of modern life and in the race for material success few find time for the study of anything but what has aptly been termed *Brodwissenschaft*. During the past few year the medical profession has lost several of the surviving ornaments of that distant time. On October 24, 1929, another courtly and learned gentleman, Dr. Robert Louis McAdam, went to his rest sorrowed, revered and beloved.

The story of Robert Louis McAdam's life could be epitomized in a few short sentences. He was born at Limerick, Ireland, on August 28, 1855. His father died when Robert was a lad of fourteen years of age, before opportunity had presented itself for the fuller development of his intellectual qualities. The family then moved to Kingstown and in the year 1880 he became a student at Trinity College. While at school and later at the University, he was remarkable for his ability to learn and the ease with which he gained distinction from his contemporaries. He won prizes and some coveted exhibitions and gave evidence at an early age of the insatiable thirst for scholarship which persisted throughout his life. Within three years he gained a degree in Arts; in 1885 he graduated in medicine and surgery; in 1887 he gained the degree of doctor of medicine by thesis and also took the degree of Master of Arts. He also worked for and gained the diploma of public health of Trinity College, Dublin. His mastery of Greek and Latin was noteworthy; he delighted in reading as a real scholar reads the works of the ancient classical writers for the enjoyment of the elegance of their diction and for the appreciation of their philosophy. He was a sound French scholar and his love of the English poets widened his intellectual vision and softened his nature. From the first his extraordinary memory lessened the burden of the task of learning. It all came easily to him and he retained all he read in the storehouse of his mind, available at any moment should it be required. Little wonder that he was able to build successfully as a physician on such a foundation.

In 1887 the family left Ireland and travelled to Australia. They came to rest in Tasmania, but later moved to Melbourne. After a time he started practice in Swan Hill. He was the first medical superintendent of the Swan Hill District Hospital. In addition he was appointed Medical Officer of Health of a large district with Swan Hill as its centre. In 1889 he married Miss Jessie Helen Reid, a resident of Ballarat. In the following year he left Swan Hill and selected St. Kilda as the scene of his practice. From the first he gained the confidence of an ever increasing number of patients and as time went by he became more and more deeply established in the affection, respect and trust of those residing near him. He joined the Victorian Branch of the British Medical Association in 1892. So popular was he and so greatly trusted and respected that within a very short time he was appointed to the Council of the Branch and in 1898 he was elected President.

He was greatly interested in ambulance affairs and performed many valuable services in connexion with the

St. John's Ambulance Association in Victoria. He joined the Council in 1904, after having acted as lecturer and examiner from 1893 onwards. In 1913 he was appointed a member of a special subcommittee which led to the institution of the Victorian Civil Ambulance Service in 1916. At that time he became a member of the provisional committee. In 1917 he was appointed chairman of the St. John's Ambulance Association in Victoria and in the same year he became a member of the Council of the Victorian Civil Ambulance Service. In 1918 they chose him to be President of the St. John's Ambulance Association. He held this office again in 1922, in 1924, in 1927 and in 1928. In 1919 he was created an Honorary Associate of the Order of Saint John and he was offered many preferments in the Order, all of which he declined. He served as adjudicator at the annual open prize examination for a period of fifteen years. He was one of the examiners for the marine certificates and was required to confirm all appointments of lecturers and examiners of the St. John's Ambulance Association.



He was one of the foundation members of the Medical Defence Association of Victoria and he signed the memorandum of association together with George Adlington Syme, J. J. Miller, F. G, Hamilton and Dr. Felix Meyer. He served as Vice-President from the inauguration of the association and after the death of the late George Adlington Syme, he was elected President. In 1915 he was placed on the Council of the Victorian Branch of the British Medical Association for a second time by his colleagues and in the following year he was chosen to be a Vice-President.

During the war he became a member of the State War Council and performed valuable service in dealing with disabled soldiers. In 1917 he had a serious illness and was subjected to four major operations. It was thought that he would not be able again to take his place on the Council of the Victorian Branch and in consequence his name was withdrawn from the ballot paper for the election of office-bearers for 1918. Had this not taken place, he would certainly have been elected President for a second term. His recovery, fortunately, was rapid and he was able to resume his duties and to work with unabated vigour. He again applied himself to his practice and again spent his energies for the benefit of his numerous patients. No one ever appealed to him for help in vain. He was skilled as a physician, sympathetic, tolerant and understanding. He had no enemies; his comrades found him ever ready to excuse their failings, to recognize their merits, to find their redeeming points. In 1923 he was again overtaken by ill health. A further operation left him a damaged man and from this time he came to realize that his days of activity were drawing to a close. Gradually he handed over his work to his son, Dr. C. G. McAdam. In 1928 he retired altogether.

The medical profession has benefited immeasurably by his precept, by his influence, by his teaching. His high moral courage, his concept of justice and his fine sense of ethical behaviour have left an indelible impression on the medical profession in Victoria. He leaves a widow, a son and one married daughter. They have received ample evidence of the very high esteem in which he was held.

Dr. C. S. Cunningham, till recently editor of *The Argus*, writes:

The profession will have made its own estimate of Dr. McAdam and I, standing outside of it, must wisely refrain from expressing an opinion. But I can claim to speak of him in, if I may say so, a wider sense. I enjoyed the privilege of close friendship with him for many years; I knew him at his best, I knew him when he was grievously sick, I have met him in the closest and most sacred relationship of adviser in my own time of trial and but one thought arises when the springs of reverence and admiration are touched. He was a gentleman; the casual meaning of this word is not intended here. It is a pity indeed that our language may be so conventionalized as to take away from some of its finest words their true significance. He was a gentleman in his regard for the finer ideals of life and duty, in his scrupulous yet instinctive respect for truth, in his naïve courtesy and charm of manner. He viewed the world through very kindly eyes. Anything sophisticated or artful did not at first excite displeasure, but amazement. He simply wondered how such things could be, not because he lacked perception, but because it would not occur to him to think evil. Abou Ben Adhem loved his fellow men.

Dr. McAdam would have made a name as a teacher in the classics and in English literature. What he had read he had studied and what he had read and studied he remembered, in fact his memory was remarkable. I have heard him recite, without the slightest hesitation for a word, long passages from Isaac Disraeli's "Curiosities of Literature" or full poems by Wordsworth and Gray and from many less well known poets. His knowledge of Greek and Latin was profound and he read the text as readily and as easily as if it were his mother tongue. It was delightful to have him to oneself in idle moments, to listen to and to appreciate his bland and honest comment on the problems of life, to hear him discuss authors ancient and modern. His modesty was charming but restrictive in its effect. Had he been cast in a different mould he would have made himself better known than he was, but he would not have been himself. He did not abjure obstrusiveness; he never thought of it, so much the better, perhaps, for those who happily came within the influence of his bright pure mind. They always left him refreshed in spirit and reinforced in purpose.

Dr. Felix Meyer writes:

It is more than thirty-five years since I first met Dr. Robert Louis McAdam, then practising at St. Kilda. Out of that meeting grew a friendship which strengthened with the years, one which gave me an insight into a character instinct with truth, sincerity, and humanity. He was, indeed, the selfless devoted physician, with a love of service for his fellow man. To his practice, which covered a wide range, he brought sound knowledge and a thorough-

ness of application his interest was keen. With the love for his profession was an educated appreciation of the delights of literature. He had studied to some purpose the classics of poetry and prose; of English poetry especially he had stored within him a "golden treasury."

A talk with him revealed the cultured and gentle nature, dignity with a sense of humour. Beneath it all there was a quiet strength and a seriousness of belief.

One could say with truth in the words of a favourite poet of his that his days were "bound each to each by natural piety."

To know Robert Louis McAdam was to care greatly for him. With him has passed away an able, high minded physician, leaving behind grateful and affectionate memories.

## Books Received.

A SYSTEM OF BACTERIOLOGY IN RELATION TO MEDICINE: (Privy Council, Medical Research Council); Volume IV; 1929. London: His Majesty's Stationery Office. Crown 4to., pp. 482. Price: 21s. net.

AIDS TO ORTHOPÆDIC SURGERY, by Eric A. Crook, M.Ch. (Oxon.), F.R.C.S. (England); 1929. London: Baillière, Tindall and Cox. Foolscap 8vo., pp. 240. Price: 3s. 6d. net.

A DICTIONARY OF SCIENTIFIC TERMS, by I. F. Henderson, M.A., and W. D. Henderson, M.A., B.Sc., Ph.D., F.R.S.E.; Second Edition, Revised; 1929. Edinburgh: Oliver and Boyd. Demy 8vo., pp. 362. Price: 16s. net.

THOSE TEETH OF YOURS, by J. Menzies Campbell, L.D.S., D.D.S., F.R.S.E.; 1929. London: William Heinemann (Medical Books) Limited. Crown 8vo., pp. 154. Price: 3s. 6d. net.

INSECTS, TICKS, MITES AND VENOMOUS ANIMALS OF MEDICAL AND VETERINARY IMPORTANCE; Part I—Medical, by W. S. Patton, M.B., Ch.B. (Edinburgh), F.E.S., and A. M. Evans, D.Sc.; 1929. Croydon: H. R. Grubb, Limited. Crown 4to., pp. 796, with illustrations. Price: 20s. net.

## Diary for the Month.

JAN. 7.—New South Wales Branch, B.M.A.: Council.
JAN. 7.—New South Wales Branch, B.M.A.: Organization and Science Committee.
JAN. 14.—New South Wales Branch, B.M.A.: Ethics Committee.
JAN. 14.—New South Wales Branch, B.M.A.: Post-Graduate Work Committee.
JAN. 21.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 22.—Victorian Branch, B.M.A.: Council.
JAN. 28.—New South Wales Branch, B.M.A.: Medical Politics Committee.

## Medical Appointments.

Dr. Stafford Fraser Sutherland (B.M.A.) has been appointed Certifying Medical Practitioner at Nagambie, Victoria, under the provisions of the *Workers' Compensation Acts.*

* * *

Dr. Spencer Carlisle Steele (B.M.A.) has been appointed Government Medical Officer at Richmond, New South Wales.

## Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xvi.

DOWERIN DISTRICT, WESTERN AUSTRALIA: Medical Officer.
MOUNT MORGAN A.F.S. MEDICAL INSTITUTE: Medical Officer.
THE QUEEN'S (MATERNITY) HOME, ROSE PARK, SOUTH AUSTRALIA: Resident House Surgeon.

## Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

| BRANCH. | APPOINTMENTS. |
|---|---|
| NEW SOUTH WALES: Honorary Secretary, 21, Elizabeth Street, Sydney. | Australian Natives' Association.<br>Ashfield and District United Friendly Societies' Dispensary.<br>Balmain United Friendly Societies' Dispensary.<br>Friendly Society Lodges at Casino.<br>Leichhardt and Petersham United Friendly Societies' Dispensary.<br>Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney.<br>North Sydney Friendly Societies' Dispensary Limited.<br>People's Prudential Assurance Company, Limited.<br>Phœnix Mutual Provident Society. |
| VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne. | All Institutes or Medical Dispensaries.<br>Australian Prudential Association Proprietary, Limited.<br>Mutual National Provident Club.<br>National Provident Association.<br>Hospital or other appointments outside Victoria. |
| QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane. | Members accepting appointments as medical officers of country hospitals in Queensland are advised to submit a copy of their agreement to the Council before signing.<br>Brisbane United Friendly Society Institute.<br>Mount Isa Hospital. |
| SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide. | All Contract Practice Appointments in South Australia.<br>Booleroo Centre Medical Club. |
| WESTERN AUSTRALIAN: Honorary Secretary, 65, Saint George's Terrace, Perth. | All Contract Practice Appointments in Western Australia. |
| NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington. | Friendly Society Lodges, Wellington, New Zealand. |

Medical practitioners are requested not to apply for appointments to positions at the Hobart General Hospital, Tasmania, without first having communicated with the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales.

## Editorial Notices.

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